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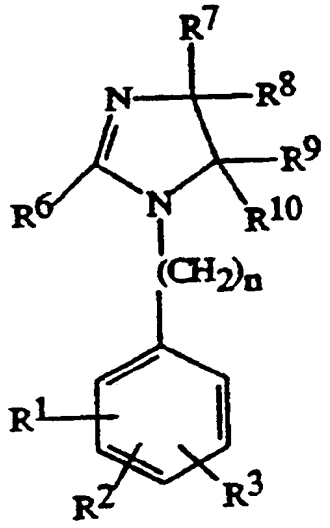
C2C CAA CKS CMV CQB CQF CSB CSC CSF CSJ CTR C1173 C1175 C1341 C1412 C1464 C1472 C1511 C1530 C1532 C211 C215 C22Y C220 C221 C222 C225 C226 C246 C25Y C250 C251 C252 C253 C254 C28X C280 C281 C30Y C31Y C311 C313 C32Y C321 C338 C339 C34Y C342 C345 C351 C352 C354 C355 C357 C36Y C360 C361 C363 C365 C366 C367 C372 C385 C386 C387 C388 C39Y C391 C394 C51X C510 C513 C514 C52X C52Y C520 C524 C527 C535 C536 C537 C538 C558 C60X C604 C62X C620 C623 C625 C628 C650 C652 C658 C662 C694 C695 C697 C699 C701 C717 C761 C762 C80Y C800 C802
C2P PA PA1 P1L1 P1L2 P13 P14 P14A P14B P15 P15A P16 P18C P19D P19E P2E P24 P25A P3B P7
U1S S2415

(56) Documents Cited
WO 93/04046 A1 WO 93/04045 A1

(58) continued overleaf

(54) Angiotensin II receptor blocking imidazoline derivatives

(57) Novel imidazolinone derivatives of formula (I) are useful as angiotensin II antagonists and can be employed for treating hypertension and congestive heart failure.



(I)

wherein the symbols are as defined in the specification.

GB 2 281 072 A

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1990.

(58) Field of Search
UK CL (Edition M) C2C CSB CSC CSF CTR
INT CL[5] C07D
Online databases: CAS ONLINE

TITLE
ANGIOTENSIN II RECEPTOR BLOCKING IMIDAZOLINONE DERIVATIVES

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to novel substituted imidazolinone derivatives. The invention also relates to pharmaceutical compositions containing the novel imidazolinone derivatives and pharmaceutical methods using them, alone and in conjugation with other drugs.

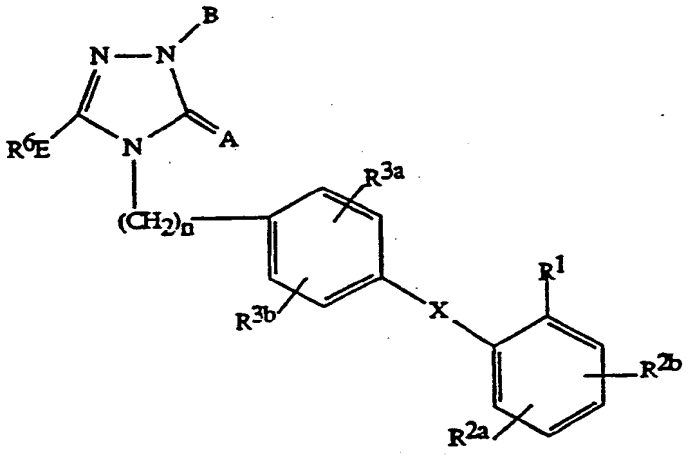
The compounds of this invention inhibit the action of the hormone angiotensin II (AII) and are useful therefore in alleviating angiotensin induced hypertension. The enzyme renin acts on a blood plasma α2-globulin, angiotensinogen, to produce angiotensin I, which is then converted by ACE to AII. The latter substance is a powerful vasopressor agent which has been implicated as a causative agent for producing high blood pressure in various mammalian species, such as the rat, dog, and man. The compounds of this invention inhibit the action of AII at its receptors on target cells and thus prevent the increase in blood pressure produced by this hormone-receptor interaction. By administering a compound of this invention to a species of mammal with hypertension due to AII, the blood pressure is reduced. The compounds of this invention are also useful for the treatment of congestive heart failure. Administration of a compound of this invention with a diuretic such as furosemide or hydrochlorothiazide, either as a stepwise combined therapy (diuretic first) or as a physical mixture, enhances the antihypertensive effect of the compound. Administration of a compound of this invention with a NSAID can prevent renal failure which sometimes results from administration of a NSAID.

Several peptide analogs of AII are known to inhibit the effects of this hormone by competitively blocking the receptors, but their experimental and clinical applications have been limited by the partial agonist activity and lack of oral absorption (M. Antonaccio, *Clin. Exp. Hypertens.*, 1982, A4, 27-46; D. H. P.

Streeten and G. H. Anderson, Jr., Handbook of Hypertension. Clinical Pharmacology of Antihypertensive Drugs, ed., A. E. Doyle, Vol. 5, pp. 246-271, Elsevier Science Publisher, Amsterdam, The Netherlands, 1984).

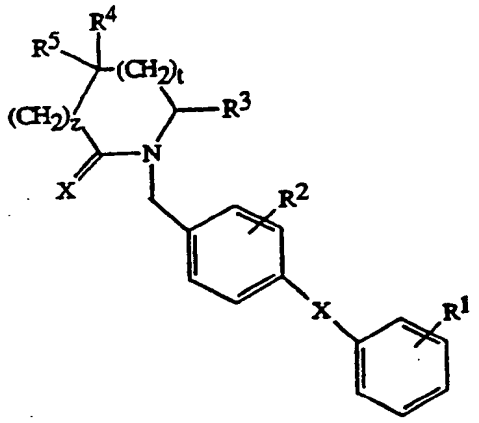
Several non-peptide antagonists of AII have been disclosed. These compounds are covered by U.S. Patents 4,207,324; 4,340,598; 4,576,958; 4,582,847; and 4,880,804; in European Patent Applications 028,834; 245,637; 253,310; and 291,969; and in articles by A. T. Chiu et al. (*Eur. J. Pharm. Exp. Therap.*, **1988**, 157, 13-21) and by P. C. Wong et al. (*J. Pharm. Exp. Therap.*, 1988, 247, 1-7). All of the U.S. Patents, European Patent Applications 028,834 and 253,310 and the two articles disclose substituted imidazole compounds which are generally bonded through a lower alkyl bridge to a substituted phenyl. European Patent Application 245,637 discloses derivatives of 4,5,6,7-tetrahydro-2H-imidazo [4,5-c]pyridine-6-carboxylic acid and analogs thereof as antihypertensive agents, specifically Ca^{2+} channel blockers.

L. Chang et al., in EP 0 412 594 A (filed July 23, 1990) disclose substituted triazolinones, triazolinethiones, and triazolinimines of the formula:



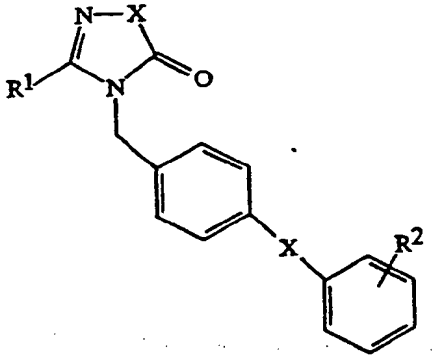
These are claimed to be antagonists of AII which are useful for treating hypertension, congestive heart failure (CHF), and elevated intraocular pressure.

C. Bernhart et al., in WO 91/14679 (published October 3, 1991) disclose heterocyclic N-substituted derivatives of the formula



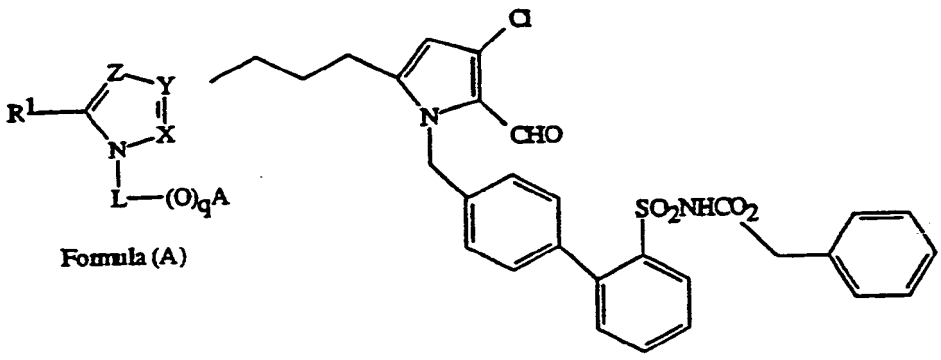
These compounds are disclosed to be antagonists of AII which are useful for treating cardiovascular disorders such as hypertension.

F. Ostermeyer et al., in EP 475,898 (published March 18, 1992) disclose heterocyclic N-substituted derivatives of formula



These compounds are disclosed to be antagonists of AII which are useful for treating cardiovascular disorders such as hypertension.

Wagner et al., in EP 0 503 162 (published September 16, 1992) disclose azole derivatives of the general Formula (A) and the specific compound Example 150.

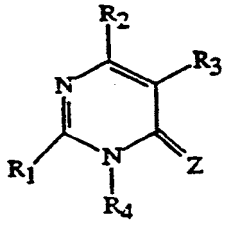


Formula (A)

Example 150

These compounds are disclosed to be antagonists of AII which are useful for treating cardiovascular disorders such as hypertension.

P. Herold and P. Buhlmayer in EP 0 407 342 A2 disclose substituted pyrimidinones, pyrimidinethiones, and pyrimidinimines of the formula:

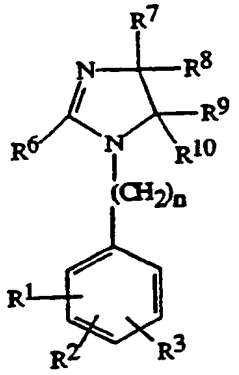


These are claimed to be antagonists of AII which are useful for treating hypertension.

E. Allen et al. in EP 0 419 048 A (filed August 21, 1990) disclose a similar series of pyrimidinones which are claimed to be antagonists of AII useful for the treatment of CHF and elevated intraocular pressure.

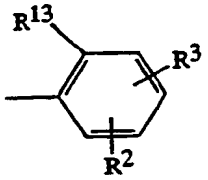
SUMMARY OF THE INVENTION

The present invention provides novel angiotensin II receptor antagonists of formula (I), pharmaceutical compositions containing compounds of formula (I) and therapeutic methods using them wherein:



(I)

R^1 is other than in the ortho position and is:



;

R^2 is

(a) H,

(b) halo (F, Cl, Br, I),

(c) C_1–C_4 alkyl,

(d) C_1–C_4 alkoxy,

(e) C_1–C_4 acyloxy,

(f) C_1–C_4 alkylthio,

(g) C_1–C_4 alkylsulfinyl,

(h) C_1–C_4 alkylsulfonyl,

(i) hydroxy (C_1–C_4) alkyl,

(j) aryl (C_1–C_4) alkyl,

(k) $-CO_2H$,

(l) –CN,

(m) $-CONHOR^{12}$,

(n) $-SO_2NHR^{21}$,

(o) $-NH_2$,

(p) C_1–C_4 alkylamino,

(q) C_1–C_4 dialkylamino,

(r) $-NHSO_2R^{20}$,
(s) $-NO_2$,
(t) furyl,
(u) aryl;

R^3 is
(a) H,
(b) halo,
(c) C_1-C_4 alkyl,
(d) C_1-C_4 alkoxy,
(e) C_1-C_4 alkoxyalkyl;

R^4 is
(a) $-CN$,
(b) $-NO_2$,
(c) $-CO_2R^{11}$;

R^5 is
(a) H,
(b) C_1–C_6 alkyl,
(c) C_3–C_6 cycloalkyl,
(d) C_2–C_4 alkenyl,
(e) C_2–C_4 alkynyl;

R^6 is
(a) C_1–C_{10} alkyl,
(b) C_3–C_8 alkenyl,
(c) C_3–C_8 alkynyl,
(d) C_3–C_8 cycloalkyl,
(e) C_4–C_8 cycloalkenyl,
(f) C_4–C_{10} cycloalkylalkyl,
(g) C_5–C_{10} cycloalkylalkenyl,
(h) C_5–C_{10} cycloalkylalkynyl,
(i) $-(CH_2)_sZ(CH_2)_mR^5$,
(j) phenyl, optionally substituted with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1–C_4 alkoxy, $-NO_2$, $-NH_2$, –OH and benzyloxy,

(k) benzyl, optionally substituted on the phenyl ring with 1-2 substituents selected from the group of halo, C_1–C_4 alkyl, C_1–C_4 alkoxy and $-NO_2$;

R^7, R^8, R^9, and R^{10} are independently chosen from

(a) H,
(b) C_1–C_8 alkyl,
(c) C_1–C_8 perfluoroalkyl,
(d) C_3–C_6 cycloalkyl,
(e) $-NO_2$,
(f) –CN,
(g) $-CONR^{15}R^{16}$
(h) $-CO_2R^{17}$,
(i) $-OR^{18}$
(j) $-(CH_2)_nCONR^{15}R^{16}$ where n is 1-4,
(k) $-(CH_2)_nCO_2R^{17}$ where n is 1-4,
(l) $(CH_2)_nOR^{18}$ where n is 1-4,
(m) aryl, wherein aryl is as defined above
(n) $-CH_2$ aryl, wherein aryl is as defined above,
(o) R^7 and R^8 taken together are $-(CH_2)_t-$, or $-(CH_2)_mX(CH_2)_q-$
(p) R^9 and R^{10} taken together can be S or O;

R^{11} is

(a) H,
(b) C_1–C_4 alkyl,
(c) C_1–C_4 cycloalkyl,
(d) phenyl,
(e) benzyl;

R^{12} is

(a) H,
(b) methyl,
(c) benzyl;

R^{13} is

(a) $-CH_2CO_2H$,
(b) $-C(CF_3)_2OH$,
(c) $-CONHNHSO_2CF_3$,

(d) $-CONHOR^{12}$,

(e) $-CONHSO_2R^{20}$,

(f) $-CONHSO_2NHR^{19}$,

(g) $-C(OH)R^{19}PO_3H_2$.

(h) $-NHCONHSO_2R^{20}$,

(i) $-NHPO_3H_2$

(j) $-SO_2NHCOR^{20}$,

(k) $-OPO_3H_2$,

(l) $-OSO_3H$,

(m) $-PO(OH)R^{19}$,

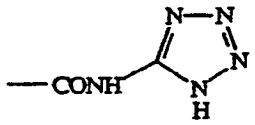
(n) $-PO_3H_2$,

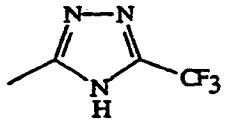
(o) $-SO_3H$,

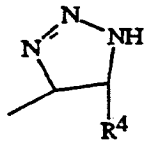
(p) $-SO_2NHR^{19}$,

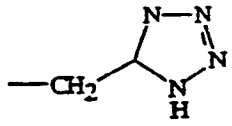
(q) $-NHSO_2NHCOR^{20}$,

(r) $-SO_2NHCONHR^{19}$,

(s) 

(t) 

(u) 

(v) 

R^{14} is

(a) H,

(b) C_1-C_6 alkyl,

(c) aryl,

(d) benzyl.

(e) COR^{11},

(f) $CONHR^{11}$;

R^{15} and R^{16} are independently

(a) H,

(b) C_1–C_6 alkyl,

(c) aryl,

(d) aryl (C_1–C_4) alkyl,

or when taken together constitute a

(e) piperidine ring,

(f) morpholine ring,

(g) piperazine ring, optionally N–substituted with C_1-C_6 alkyl, phenyl or benzyl;

R^{17} is

(a) H,

(b) C_1–C_6 alkyl,

(c) phenyl,

(d) benzyl;

R^{18} is

(a) H,

(b) C_1-C_6 alkyl,

(c) phenyl,

(d) benzyl;

R^{19} is

(a) H,

(b) C_1–C_5 alkyl optionally substituted with a substituent selected from the group consisting of aryl, heteroaryl, -OH, –SH, C_1–C_4 alkyl, C_1–C_4 alkoxy, C_1–C_4 alkylthio, $–CF_3$, halo, $–NO_2$, $–CO_2H$, $-CO_2CH_3$, $–CO_2$–benzyl, $–NH_2$, C_1–C_4 alkylamino, C_1–C_4 dialkylamino, $–PO_3H_2$,

(c) aryl,

(d) $–CH_2$ aryl,

(e) heteroaryl.

R^{20} is

(a) aryl,

(b) C_3-C_7 cycloalkyl,

(c) C_1-C_4 perfluoroalkyl,

(d) C_1-C_4 alkyl optionally substituted with a substituent selected from the group consisting of aryl, heteroaryl, -OH, -SH, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkylthio, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, $-CO_2$-benzyl, $-NH_2$, C_1-C_4 alkylamino, C_1-C_4 dialkylamino, $-PO_3H_2$,

(e) C_1-C_4 alkoxy optionally substituted with a substituent selected from the group consisting of aryl, heteroaryl, -OH, -SH, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkylthio, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, $-CO_2$-benzyl, $-NH_2$, C_1-C_4 alkylamino, C_1-C_4 dialkylamino, $-PO_3H_2$, or

(f) heteroaryl, where heteroaryl is as defined above;

R^{21} is

(a) H,

(b) C_1–C_6 alkyl,

(c) phenyl,

(d) benzyl,

X is

(a) -S-,

(b) -O-,

(c) -SO-,

(d) $-SO_2$-,

(e) $-CHR^{14}$-,

(f) $-NR^{14}$-;

Z is

(a) –O–,

(b) –S–,

(c) $–NR^{11}–$

m is 1 to 5;

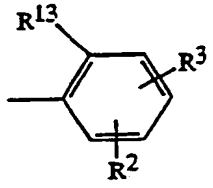
n is 1 to 4;

q is 1 to 5;

t is 2 to 5;

or a pharmaceutically acceptable salt thereof.

Preferred compounds of this invention are those of formula (I) wherein R^1 is in the para position and is



;

R^6 is

(a) C_1-C_{10} alkyl,

(b) C_3-C_{10} alkenyl,

(c) C_3-C_{10} alkynyl,

(d) C_3-C_8 cycloalkyl,

(e) phenyl, optionally substituted with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, -NO_2, -NH_2, -OH and benzyloxy,

(f) benzyl, optionally substituted on the phenyl ring with one or two substituents selected from the group consisting of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy and -NO_2;

R^7, R^8, R^9, R^{10} are independently

(a) H,

(b) C_1–C_4 alkyl,

(c) C_1-C_4 perfluoroalkyl,

(d) C_3-C_6 cycloalkyl,

(e) phenyl, optionally substituted with one or two substituents selected from the group of halo, C_1-C_3 alkyl, C_1-C_3 alkoxy, NO_2, CF_3, NH_2, and OH,

(f) R^7 and R^8 taken together are -$(CH_2)_t$-, or -$(CH_2)_m X (CH_2)_q$-,

(g) R^9 and R^{10} taken together can be S or O;

R^{13} is

(a) -$CONHSO_2R^{20}$,

(b) -$NHCONHSO_2R^{20}$,

(c) -$NHSO_2NHCOR^{20}$,

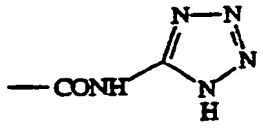
(d) –PO_3H_2.

(e) $-SO_3H$,

(f) $-SO_2NHR^{19}$,

(g) $-SO_2NHCOR^{20}$,

(h) $-SO_2NHCONHR^{19}$,

(i)  ;

or a pharmaceutically acceptable salt thereof.

Still more preferred are compounds of the above preferred scope formula (I) wherein

R^6 is

(a) C_1-C_7 alkyl,

(b) C_3-C_4 alkenyl,

(c) C_3-C_4 alkynyl,

(d) phenyl, optionally substituted with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, $-NO_2$, $-NH_2$, -OH and benzyloxy;

R^{13} is

(a) $-CONHSO_2R^{20}$,

(b) $-NHCONHSO_2R^{20}$,

(c) $-NHSO_2NHCOR^{20}$,

(d) $-SO_2NHR^{19}$,

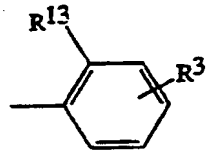
(e) $-SO_2NHCOR^{20}$,

(f) $-SO_2NHCONHR^{19}$;

or a pharmaceutically acceptable salt thereof.

Most preferred due to their activity as angiotensin II antagonists are compounds of the more preferred scope wherein

R^1 is

 ;

or a pharmaceutically acceptable salt thereof.

Illustrative of the most preferred compounds of the invention are the following:

- N-[4'-[[4-oxo-2-propyl-8-thia-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide
- N-[4'-[[4-oxo-2-butyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-4-chlorobenzamide
- N-[4'-[[4-oxo-2-propyl-8-thia-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[2.4]hept-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-butyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dicyclopropyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-bistrifluoromethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl][3'-methyl(1,1'-biphenyl-2-ylsulfonyl)]]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl][4-propyl(1,1'-biphenyl-2-ylsulfonyl)]]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1.1'-biphenyl-2-ylsulfonyl)]-trifluoroacetamide

- 3,5-dihydro-5,5-dimethyl-2-propyl-3-[(2'-(N-((phenylsulfonyl)carboxamido)biphen-4-yl)methyl]-4H-imidazol-4-one
- N-[4'-[[4-oxo-8-benzyl-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, phenethyl ester
- N-[4'-[[8-benzoyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, n-butyl ester
- N-[4'-[[8-benzoyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl][3'-fluoro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[8-benzoyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl][3'-chloro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[8-acetyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl][3'-methyl-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl][(3'-fluoro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl][(3'-chloro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl][(3'-methyl-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, 2-methylpropyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl][3'-methyl(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl][4-propyl(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid,n-butyl ester

Note that throughout the text when an alkyl substituent is mentioned, the normal alkyl structure is meant (e.g., butyl is n-butyl) unless otherwise specified. However, in the definition of radicals above (e.g., R^6), both branched and straight chains are included in the scope of alkyl, alkenyl and alkynyl.

The term aryl, as used herein, is meant to include phenyl optionally substituted with one to three substituents selected from the group consisting of -OH, -SH, C_1-C_4-alkyl, C_1-C_4-alkoxy, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, $-CO_2$-benzyl, $-NH_2$, $-NH(C_1$-C_4-alkyl), $-N(C_1$-C_4-alkyl)$_2$.

The term heteroaryl, as used herein, is meant to include unsubstituted, monosubstituted or disubstituted 5- to 10-membered mono- or bicyclic aromatic rings which can optionally contain from 1 to 3 heteroatoms selected from the group consisting of O, N, and S. Included in the definition of the group heteroaryl, but not limited to, are the following: pyridyl, pyridazinyl, pyrimidinyl, pyrazinyl, 1,3,5-triazinyl, furyl, thiophenyl, imidazolyl, oxazolyl, thiazolyl, benzofuranyl, benzothiophenyl, benzimidazolyl, benzoxazolyl, benzothiazolyl, indolin-2-onyl, indolinyl, indolyl, pyrrolyl, quinonlinyl and isoquinolinyl. Particularly preferred are 2-, 3-, or 4-pyridyl; 2- or 3-furyl; 2- or 3-thiphenyl; 2-, 3-, or 4-quinolinyl; or 1-, 3-, or 4-isoquinolinyl optionally substituted with one to three substituents selected from the group consisting of -OH, -SH, C_1-C_4-alkyl, C_1-C_4-alkoxy, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, $-CO_2$-benzyl, $-NH_2$, $-NH(C_1$-C_4-alkyl), $-N(C_1$-C_4-alkyl)$_2$.

Pharmaceutically suitable salts include both the metallic (inorganic) salts and organic salts; a list of which is given in Remington's Pharmaceutical Sciences, 17th Edition, p. 1418 (1985). It is well known to one skilled in the art that an appropriate salt form is chosen based on physical and chemical stability, flowability, hydroscopicity, and solubility. Preferred salts of this invention for reasons cited above include potassium, sodium, calcium, and ammonium salts.

DETAILED DESCRIPTION

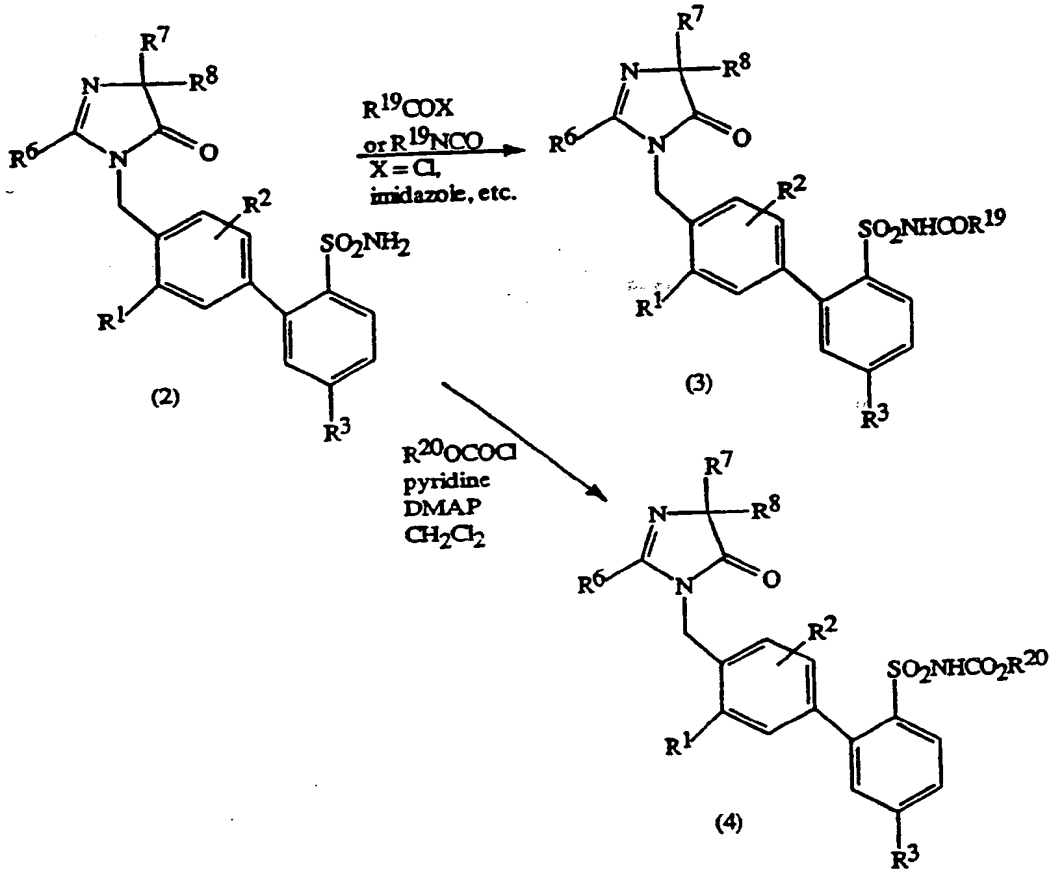
Synthesis

The compounds of formula (I) may be prepared using the reactions and techniques described in this section. The reactions are performed in solvent suitable to the reagents and materials employed and suitable for the transformation being effected. It is understood by those skilled in the art of organic synthesis that the functionality present on the imidazole and other portions of the molecule must

be consistent with the chemical transformations proposed. This will frequently necessitate judgment as to the order of synthetic steps, protecting groups required, deprotection conditions and activation of a benzylic position to enable attachment to nitrogen on the imidazole nucleus. Throughout the following section, not all compounds of formula (I) falling into a given class may necessarily be prepared by all the methods described for that class. Substituents on the starting materials may be incompatible with some of the reaction conditions required in some of the methods described. Such restrictions to the substituents which are compatible with the reaction conditions will be readily apparent to one skilled in the art and alternative methods described must then be used. The compounds of this application that have a chiral center may be resolved into the pure or partially pure optical isomers by any of the appropriate procedures known to those skilled in the art.

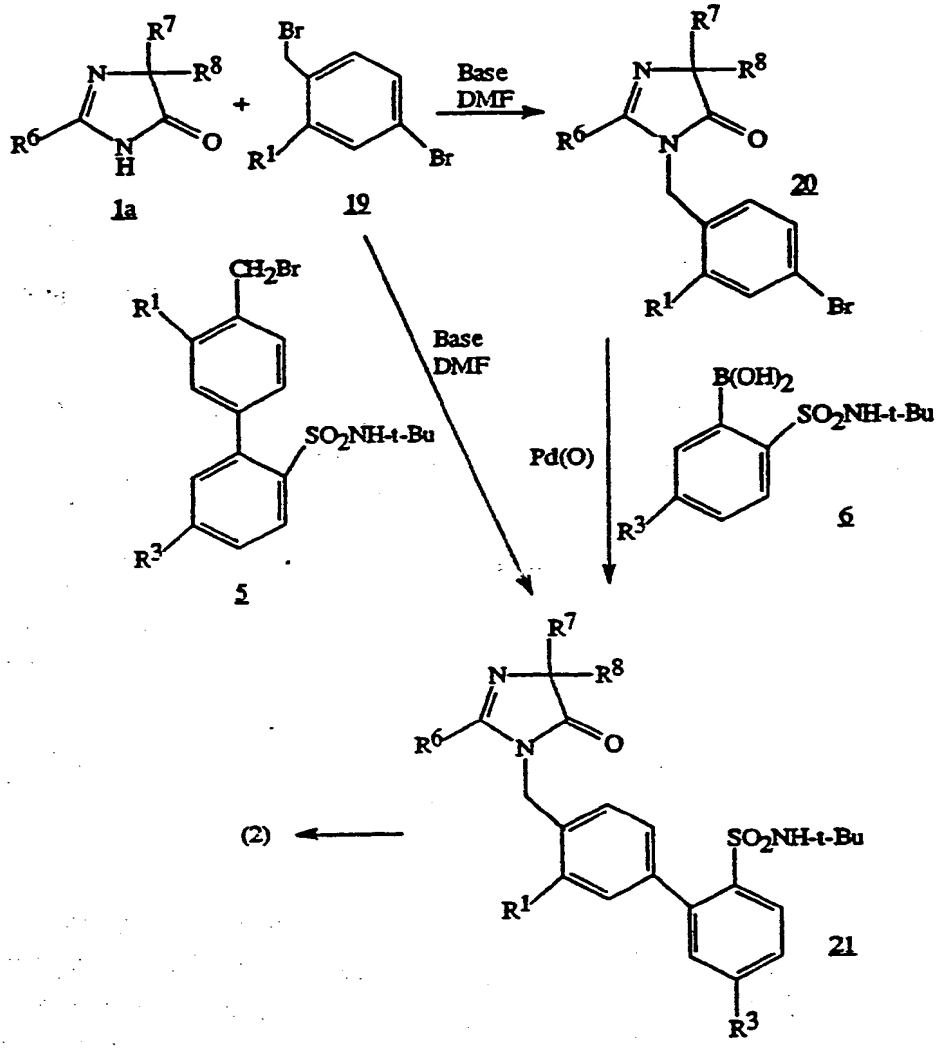
The compounds of the present invention can be prepared by reaction of a sulfonamide of formula (2) with an acylating reagent such as an acyl halide or acyl imidazole, or an alkyl chroroformate, or a carbamoylating reagent such as an isocyanate, (Scheme 1). Alcohol exchange can also be performed on compounds of formula (4) by heating with excess of the desired alcohol to give new compounds within the present invention. The sulfonamides 2 can be prepared as described in European Application EP 479,479, which is hereby incorporated by reference, and as shown in Scheme 2.

SCHEME 1



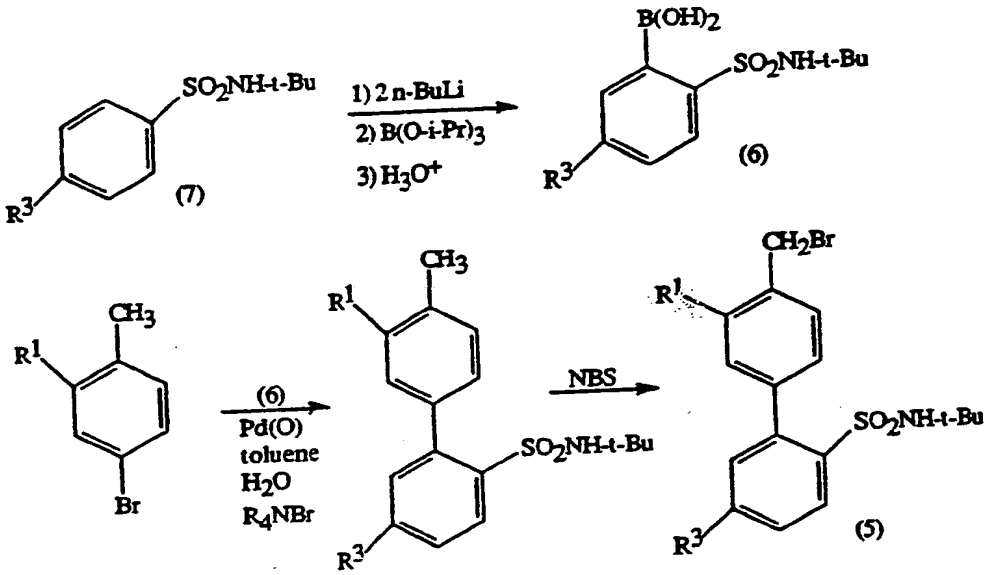
The alkylation produces a mixture of the two regioisomers using ether sodium hydride or potassium carbonate as base. The N^1 regioisomer is the major and the N^3 is the minor products. These two isomers can be separated and purified using conventional separation techniques such as chromatography or crystallization. In those cases where separation of regioisomers is difficult by conventional techniques, the mixture can be transformed into suitable derivatives that can be separated by usual separation methods. They possess distinct physical and biological properties.

SCHEME 2



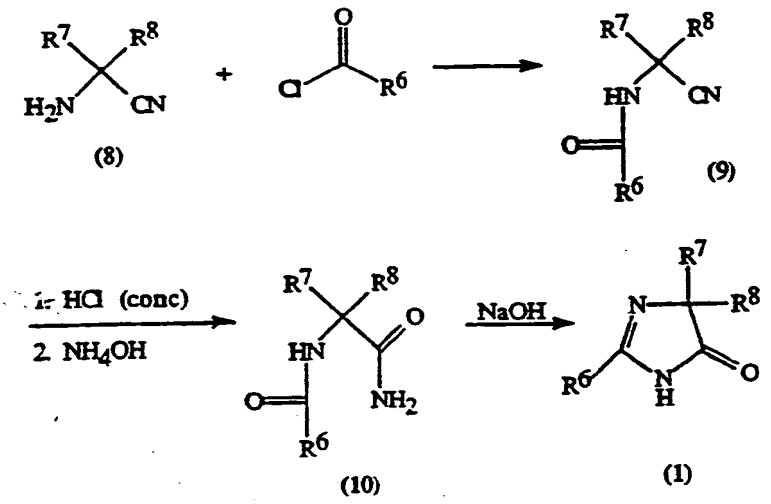
The biphenyl intermediates of formula (5) can be prepared as described in European Patent Application EP 479,479 and references therein, or as shown in Scheme 3. The boronic acid 6 may be prepared by lithiation of sulfonamide 7, followed by treatment with triisopropyl borate and hydrolysis as shown in Scheme 3.

SCHEME 3



The starting imidazolinones are readily available by any number of standard methods. For example, imidazolinone of formula (1) can be prepared as shown in Scheme 4. The amino nitrile 3 is readily obtainable from aldehydes and ketones via the Strecker Synthesis and various modifications thereof (R^7=R^8=CF_3, Y. V. Zeifman, N. P. Gambaryan, I. L. Knunyants, Dokl. Acad. Nauk. S.S.S.R., 153, 1334, 1963). Treatment of the amino nitrile with triethyl amine and one equivalent of the appropriate acyl or aroyl chloride 8 in methylene chloride at room temperature overnight, gives the corresponding amidonitrile 9. Alternatively, the nitrile can be made following the procedure described in German patent disclosure DE3704100Al. The nitrile can be hydrolyzed to the diamide 10 using standard procedures such as treatment with hydrochloric acid followed by ammonium hydroxide. Treatment of the diamide with 1 sodium hydroxide as described in E. Mohr, J. Pract. Chem., 81, 49, (1910), gives the imidazolinone 1.

SCHEME 4

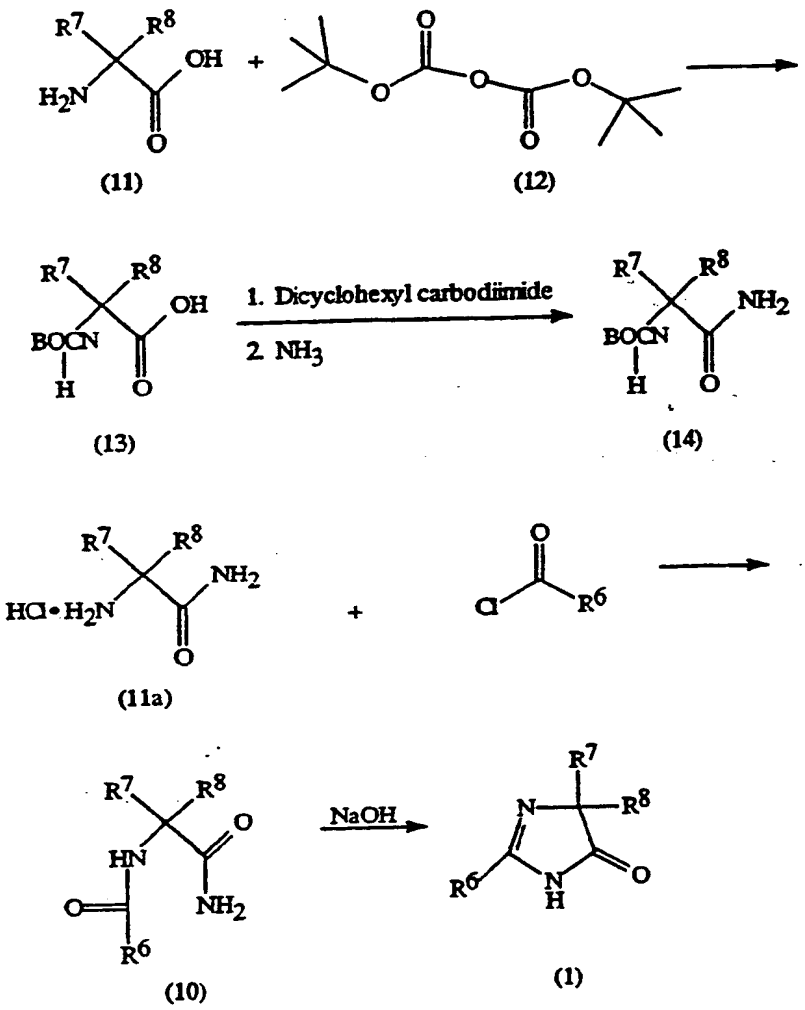


Alternatively, imidazolinones of formula (1) can also be prepared as shown in Scheme 5. Treatment of the amino acid **11** with tert-butyl pyrocarbonate **12** with two or more equivalents of base gives the BOC (tert-butyloxycarbonyl) protected amino acid **13**, M. Bodanszky and A. Bodanszky, The Practice of Peptide Chemistry, 1984. The protected amino amide **14** can be synthesized from the active ester followed by treatment with ammonia. Deprotection using HCl gas gives the amino amide hydrochloride **11a**. Treatment with two or more equivalents of base and the appropriate acyl or aroyl chloride gives the diamide **10** which can be cyclized by treatment with 1 N sodium hydroxide as described above.

Likewise, compound **10** may be obtained by reacting amino acid with the requisite acid chloride by either a Schotten-Baumann procedure, or simply stirring in a solvent such as methylene chloride in the presence of base such as sodium bicarbonate, pyridine or triethyl amine followed by coupling reaction with ammonia via a variety of amide or peptide forming reactions such as DCC coupling, azide coupling, mixed anhydride synthesis or any other coupling procedure familiar to one skilled in the art.

The use of 1-amino-1-cycloalkylcarboxylic acids in the above procedure provides the imidazolinone starting materials for the preparation of the spiro-substituted imidazolinones of formula (I).

SCHEME 5

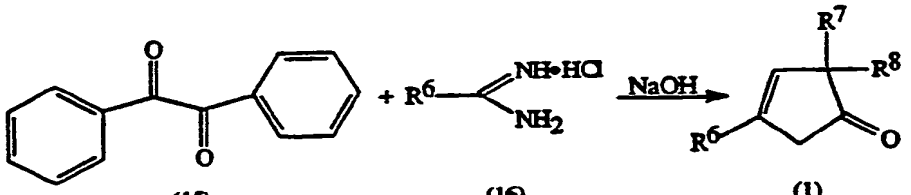


Imidazolinones of formula (1) can also be prepared following the procedure described in Japanese Patent disclosure JP 58055467, and the procedure by H. Lehr, J. Am. Chem. Soc., 75, 3640, 1953 and references therein.

Imidazolinones of formula (1) wherein R^7 an R^8 are both phenyl can be prepared as shown in Scheme 6 by reaction of benzil 15 with alkyl or aryl amidine hydrochloride 16. A. W. Cox, Org. Syn., 1, 5, R. T. Boere, R. T. Oakley, R. W. Reed, J. Organomet. Chem., 331, 161 (1987) in the presence of base such as 1 N

sodium hydroxide, G. Rio and A. Rajon, Bull. Soc. Chim. France, 543 (1958) and references therein.

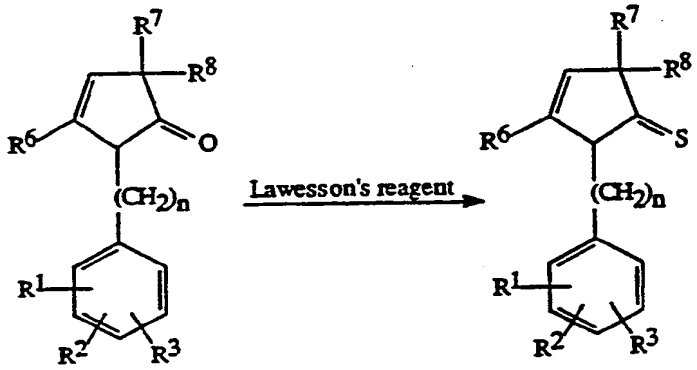
SCHEME 6



(15) (16) (1)

The imidazoline thiones of formula (18) can be prepared by treatment of the requisite alkylated imidazolinone 17 with Lawesson's reagent or phosphorus pentasulfide as described in M. P. Cava and M. I. Levinson, Tetrahedron, 41, 5061, 1985 (Scheme 7).

SCHEME 7



(17) (18)

The compounds of this invention and their preparation can be understood further by the following examples which do not constitute a limitation of the invention. In these examples, unless otherwise indicated, all temperatures are in degrees centigrade and parts and percentages are by weight.

EXAMPLE 1

N-((4'-(((4-oxo-2-propyl-8-thia-1,3-diazaspiro-((4.5))dec-1-en-3-yl-methyl))((1,1'-biphenyl))-2-ylsulfonyl))-benzamide

PART A: Preparation of 4-amino-4-cyanotetrahydrothio-pyrane

Sodium cyanide (2.11 g, 43 mmol) was dissolved in water (40 mL). Ammonium chloride (2.53 g, 47.3 mmol) was added followed by a solution of tetrahydrothiopyran-4-one (5.0 g, 43 mmol) in methanol (40 mL). The mixture was stirred at room temperature under N_2 overnight. The mixture was diluted with H_2O and extracted with methylene chloride. The combined organic layer was washed with brine, dried over $MgSO_4$ and concentrated. The residue was chromatographed on silica gel eluting with hexane-ethyl acetate (1:1) to give 5.28 g of white solid (86%). MS m/e 143.0 (M+H)+; ^{1}HNMR ($CDCl_3$/TMS) δ 1.60-2.00 (m, 4H, CH_2), 2.25 (d, 2H, CH_2), 2.62-3.00 (m, 4H, CH_2 and NH_2); IR (KBr, cm^{-1}) 2218.6 (s, CN), 3371.3 3302.5 (d, NH_2).

PART B: Preparation of 4-N-butyramido-4-cyanotetrahydro-thiopyrane

Butyryl chloride (5.8 mL, 40.8 mmol) was added dropwise to a cooled mixture of 4-amino-4-cyano-tetrahydrothiopyrane (5.28 g, 37.1 mmol) and triethyl amine (5 mL) in methylene chloride (150 mL). The mixture was stirred for 3 h at room temperature after which it was poured into lN HCl (50 mL). The organic layer was washed with lN HCl (2x50 mL), lN NaOH (2x50 mL), dried ($MgSO_4$) and concentrated. The residue was triturated with hexane to give a white solid (7.50 g, 95%). MS m/e 213, (M+H)+, ^{1}HNMR ($CDCl_3$/TMS) δ 0.98 (t, 3H, CH_3), 1.68 (m, 2H, CH_2), 1.96 (m, 2H, CH_2), 2.20 (t, 2H, CH_2), 2.70 (m, 4H, CH_2), 3.01 (m, 2H, CH_2), 5.50 (s, lH, NH).

PART C: Preparation of 4-aminocarbonyl-4-N-butyramido-tetrahydrothiopyrane

4-N-butyramido-4-cyanotetrahydro-thiopyrane (7.5 g, 35.3 mmol) was dissolved in concentrated hydrochloric acid (50 mL) at 0°C. Cold water (175 mL) was added immediately followed by treatment with concentrated ammonium hydroxide to pH 5-6. The mixture was extracted successively with methylene chloride. The organic layer was combined, washed with brine, dried over $MgSO_4$ and concentrated to give white solid (7.0 g, 86%). MS m/e 231 (M+H)+, ^{1}HNMR (DMSO-d6/TMS) δ 0.86 (t, 3H, CH_3), 1.50 (s, 2H, CH_2), 1.90 (t, 2H, CH_2), 2.18

(t, 2H, CH_2), 2.20-2.47 (m, 4H, CH_2), 2.76 (t, 2H, CH_2), 6.90 (t, 2H, NH_2), 7.68 (s, 1H, NH).

PART D: Preparation of 4-oxo-2-propyl-8-thia-1,3-diazaspiro-(4.5)dec-1-ene

4-Aminocarbonyl-4-N-butyramido-tetrahydrothiopyrane (7.0 g, 30.4 mmol) was heated with 1N sodium hydroxide (50 mL) for 30 minutes. The mixture was cooled to room temperature and some solid material was filtered off. The filtrate was neutralized with aqueous HCl and the white precipitate formed was filtered and dried (2.63 g). The aqueous layer was extracted with methylene chloride. The combined organic layer was washed with brine, dried and concentrated to a white solid (1.35 g). A total of 3.98 g of product was isolated (62%). MS m/e 213 (M+H)+, ^{1}HNMR ($CDCl_3$/TMS) δ 1.00 (t, 3H, CH_3), 1.60-1.80 (m, 4H, CH_2), 2.05 (m, 2H, CH_2), 2.44 (t, 2H, CH_2), 2.75 (m, 2H, CH_2), 3.02 (t, 2H, CH_2), 8.30 (s, 1H, NH).

PART E: Preparation of N-[(4'-[((4-oxo-2-propyl-8-thia-1,3-diazaspiro-[(4.5)]dec-1-en-3-yl-methyl)]-N-tert-butyl[(1,1'-biphenyl)]-2-sulfonamide)

4-Oxo-2-propyl-8-thia-1,3-diazaspiro-(4.5)dec-1-ene (0.83 g, 3.9 mmol) was dissolved in dimethyl formamide (20 mL). Sodium hydride (0.18 g of 80% dispersion in mineral oil) was added portionwise. The mixture was allowed to stir at room temperature for 15 minutes. 4'-bromomethyl-N-tert-butyl (1,1'-biphenyl)-2-sulfonamide (1.5 g, 3.9 mmol) was added. The mixture was stirred at room temperature under N_2 for 24 h. The solvent was removed *in vacuo*. The residue was dissolved in ethyl acetate and washed with water and brine. It was then dried over $MgSO_4$, concentrated and chromatographed on silica gel eluting with hexane-ethyl acetate (1:1) to yield 1.65 g of white solid (82%). MS m/e 514.2 (M+H)+, ^{1}HNMR($CDCl_3$/TMS) δ 0.98 (t, 3H, CH_3), 0.99 (s, 9H, CH_3), 1.74 (m, 4H, CH_2), 2.10 (m, 2H, CH_2), 2.34 (t, 2H, CH_2), 2.79 (m, 2H, CH_2), 3.09 (t, 2H, CH_2), 3.45 (s, 1H, NH), 4.73 (s, 2H, CH_2Ar), 7.25 (m, 3H, ArH), 7.50 (m, 4H, ArH), 8.18 (d, 1H, ArH).

PART F: Preparation of N-((4'-(((4-oxo-2-propyl-8-thia-1,3-diazaspiro-((4.5))dec-1-en-3-yl-methyl))((1,1'-biphenyl))-2-sulfonamide

N-((4'-(((4-oxo-2-propyl-8-thia-1,3-diazaspiro-((4.5))dec-1-en-3-yl-methyl))-N-tert-butyl((1,1'-biphenyl))-2-sulfonamide (1.56 g, 3.0 mmol) was refluxed with trifluoroacetic acid (10 mL) under N_2 for 2 h. The solvent was removed *in vacuo* and the residue was dissolved in methylene chloride. The organic solution was washed with aqueous $NaHCO_3$ and brine. It was filtered through phase transfer paper and concentrated to an off-white solid (1.31 g, 95%). MS m/e 458.0 (M+H)+, ^{1}HNMR($CDCl_3$/TMS) δ 0.97 (t, 3H, CH_3), 1.60-1.82 (m, 4H, CH_2), 2.10 (m, 2H, CH_2), 2.36 (t, 2H, CH_2), 2.78 (m, 2H, CH_2), 3.09 (t, 2H, CH_2), 4.21 (s, 2H, NH_2), 4.73 (s, 2H, CH_2Ar), 7.20 (d, 2H, ArH), 7.30 (d, 1H, ArH), 7.42-7.63 (m, 4H, ArH), 8.17 (d, 1H, ArH).

PART G: Preparation of N-((4'-(((4-oxo-2-propyl-8-thia-1,3-diazaspiro-((4.5))dec-1-en-3-yl-methyl))((1,1'-biphenyl))-2-ylsulfonyl))-benzamide

1,1'-Carbonyl diimidazole (1.26 g, 7.8 mmol) and benzoic acid (0.96-g, 7.8 mmol) was refluxed with tetrahydrofurane (30 mL) under N_2 for 2 h. The mixture was cooled to room temperature, and a solution of N-((4'-(((4-oxo-2-propyl-8-thia-1,3-diazaspiro-((4.5))dec-1-en-3-yl-methyl))((1,1'-biphenyl))-2-sulfonamide (1.20 g. 2.6 mmol) and 1,8-diazabicyclo[5.4.0]undec-7-ene (1.2 mL, 7.8 mmol) in THF (30 mL) was added. The reaction mixture was then refluxed for 1.5 h. The mixture was cooled and poured into 20 mL of 25% aqueous citric acid. It was extracted with ethyl acetate. The combined organic solution was washed with brine, dried over $MgSO_4$ and concentrated. The residue was chromatographed on silica gel eluting with 5% methanol in methylene chloride to yield 1.3 g of the desired product (91%). M.P. 105-108°C, MS m/e 561 (M+H)+, ^{1}HNMR($CDCl_3$/TMS) δ 0.98 (t, 3H, CH_3), 1.60-1.80 (m, 4H, CH_2), 2.08 (t, 2H, CH_2), 2.34 (t, 2H, CH_2), 2.78 (m, 2H, CH_2), 3.08 (t, 2H, CH_2), 4.65 (s, 2H, CH_2Ar), 6.99 (d, 2H, ArH), 7.23 (d, 1H, ArH), 7.42 (m, 4H, ArH), 7.60 (m, 4H. ArH), 8.40 (d, 1H, ArH).

EXAMPLE 2

N-((4'-(((4-oxo-2-propyl-1,3-diazaspiro((4.4))non-1-en-3-yl)methyl))((1,1'-biphenyl-2-ylsulfonyl))-benzamide

PART A: Preparation of 4-oxo-2-propyl-1,3-diazaspiro-(4.4)non-1-ene

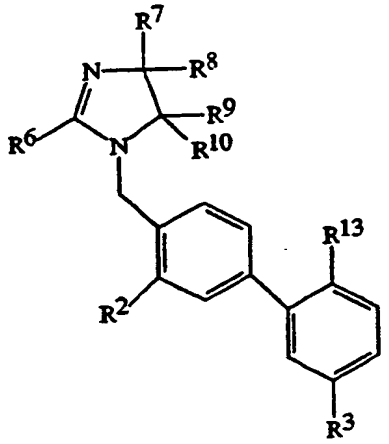
1-Amino-1-cyclopentane carboxylic acid methyl ester (10.1 g, 70.6 mmol), ethyl butanimidate hydrochloride (12.7 g, 84.7 mmol) and triethyl amine (17 mL) was refluxed in benzene (50 mL) under N_2 overnight. The solvent was removed *in vacuo* and the residue was dissolved in methylene chloride, washed with water and brine, and concentrated. The crude product mixture was chromatographed on silica gel eluting with ethyl acetate to give 8.47 g of colorless oil (67%). MS m/e 181.1 (M+H)+, ^{1}HNMR($CDCl_3$/TMS) δ 1.00 (t, 3H, CH_3), 1.50-2.20 (m, 10H, CH_2), 2.41 (t, 2H, CH_2), 9.09 (br.s, 1H, NH).

PART B: N-((4'-(((4-oxo-2-propyl-1,3-diazaspiro-((4.4))non-1-en-3-yl)methyl))((1,1'-biphenyl-2-ylsulfonyl))-benamide

The titled compound was prepared from 4-oxo-2-propyl-1,3-diazaspiro-(4.4)non-1-ene and 4'-bromomethyl-N-tert-butyl(1,1'-biphenyl)-2-sulfonamide according to the procedures described in Part E, F and G of Example 1. M.P. 118-125°C, MS m/e 529 (M+H)+, ^{1}HNMR(DMSO-d6/TMS) δ 0.89 (t, 3H, CH_3), 1.50-1.92 (m, 10H, CH_2), 2.34 (t, 2H, CH_2), 4.68 (s, 2H, CH_2Ar), 7.00 (d, 2H, ArH), 7.10-7.62 (m, 10H, ArH), 8.10 (d, 1H, ArH).

Compounds 1-625 in Table 1 can be prepared by the procedures described in Examples 1 and 2 employing the appropriately substituted imidazolines and benzyl halides or mesylates.

TABLE 1



Ex.	R^6	R^7	R^8	R^9, R^{10}	R^{13}	R^2, R^3	MS(M+H)$^+$
1	n-Pr	$-(CH_2)S(CH_2)_2-$		O	$-SO_2NHCOC_6H_5$	H,H	561
2	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCOC_6H_5$	H,H	529
3	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO(n\text{-}C_4H_9)$	H,H	
4	n-Bu	$-(CH_2)_4-$		O	$-SO_2NHCOC_6H_5$	H,H	543
5	n-Pr	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	H,H	504
6	n-Pr	CH_3	CH_3	O	$-CONHSO_2CH_2C_6H_5$	H,H	
7	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H	
8	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H	
9	n-Pr	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	H,H	
10	n-Pr	CH_3	CH_3	O	$-CH_2CO_2H$	H,H	
11	n-Pr	CH_3	CH_3	O	$-C(CF_3)_2OH$	H,H	
12	n-Pr	CH_3	CH_3	O	$-CONHNHSO_2CF_3$	H,H	
13	n-Pr	CH_3	CH_3	O	$-CONHOCH_3$	H,H	
14	n-Pr	CH_3	CH_3	O	$-CONHSO_2C_6H_5$	H,H	
15	n-Pr	CH_3	CH_3	O	$-PO_3H_2$	H,H	
16	n-Pr	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	CH_3,H	
17	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H	
18	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H	
19	n-Pr	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	CH_3,H	
20	n-Pr	CH_3	CH_3	O	$-SO_3H$	CH_3,H	

21	n-Pr	CH_3	CH_3	O	$-SO_2HCONH(n\text{-}Bu)$	CH_3,H
22	n-Pr	CH_3	CH_3	O	$-SO_2NH(C_5NH_4)$	CH_3,H
23	n-Pr	CH_3	CH_3	O	$-SO_2NHCONH(n\text{-}C_5H_{11})$	CH_3,H
24	n-Pr	CH_3	CH_3	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	CH_3,H
25	n-Pr	CH_3	CH_3	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
26	n-Pr	CH_3	CH_3	O	$-NHSO_2NHCOCH_2C_6H_5$	CH_3,H
27	n-Pr	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	Cl,H
28	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
29	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
30	n-Pr	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	Cl,H
31	n-Pr	CH_3	CH_3	O	$-OPO_3H_2$	Cl,H
32	n-Pr	CH_3	CH_3	O	$-PO(OH)CH_2C_6H_5$	Cl,H
33	n-Pr	CH_3	CH_3	O	$-OSO_3H$	Cl,H
34	n-Pr	CH_3	CH_3	O	$-NHPO_3H_2$	Cl,H
35	n-Pr	CH_3	CH_3	O	$-SO_2NH_2$	Cl,H
36	n-Pr	CH_3	CH_3	O	$-SO_2NHC_2H_5$	Cl,H
37	n-Pr	CH_3	CH_3	O	$-SO_2NHC_{10}H_7$	Cl,H
38	n-Pr	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	F,H
39	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	F,H
40	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	F,H
41	n-Pr	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	F,H
42	n-Pr	CH_3	CH_3	O	$-NHSO_2NHCO(n\text{-}Bu)$	F,H
43	n-Pr	CH_3	CH_3	O	$-SO_2NHCONH(n\text{-}Bu)$	F,H
44	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(i\text{-}Bu)$	F,H
45	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(4\text{-}HOC_6H_5)$	F,H
46	n-Pr	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	F,H
47	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(4\text{-}C_5NH_4)$	F,H
48	n-Pr	CH_3	CH_3	O	$-SO_2NHCONHCH_2C_6H_5$	F,H
49	n-Pr	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	H,n-Pr
50	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_6H_{11})$	H,n-Pr
51	n-Pr	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,n-Pr
52	n-Pr	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	H,n-Pr
53	n-Pr	CH_3	CH_3	O	$-CH_2CO_2H$	H,n-Pr
54	n-Pr	CH_3	CH_3	O	$-C(CF_3)_2OH$	H,n-Pr

55	n-Pr	CH_3	CH_3	O	-$CONHNHSO_2CF_3$	H,n-Pr
56	n-Pr	CH_3	CH_3	O	-CONHOH	H,n-Pr
57	n-Pr	CH_3	CH_3	O	-$CONHOCH_3$	H,n-Pr
58	n-Pr	CH_3	CH_3	O	-$CONHOCH_2C_6C_5$	H,n-Pr
59	n-Pr	CH_3	CH_3	O	-$SO_2NHCOC_6H_5$	Cl,n-Pr
60	n-Pr	CH_3	CH_3	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	Cl,n-Pr
61	n-Pr	CH_3	CH_3	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	F,n-Pr
62	n-Pr	CH_3	CH_3	O	-$SO_2NHCOCH_2C_6H_5$	F,n-Pr
63	n-Pr	CH_3	CH_3	O	-$CONHSO_2(4\text{-}ClC_6H_4)$	Cl,n-Pr
64	n-Pr	CH_3	CH_3	O	-$CONHSO_2C_2F_5$	F,n-Pr
65	n-Pr	CH_3	CH_3	O	-$CONHSO_2C_2H_4OH$	Cl,n-Pr
66	n-Pr	CH_3	CH_3	O	-$CONHSO_2C_2H_4CO_2H$	F,n-Pr
67	n-Pr	CH_3	CH_3	O	-$CONHSO_2C_2H_4NH_2$	F,n-Pr
68	n-Pr	CH_3	CH_3	O	-$CONHSO_2NH_2$	Cl,n-Pr
69	n-Bu	CH_3	CH_3	O	-$SO_2NHCOC_6H_5$	H,H
70	n-Bu	CH_3	CH_3	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
71	n-Bu	CH_3	CH_3	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
72	n-Bu	CH_3	CH_3	O	-$SO_2NHCOCH_2C_6H_5$	H,H
73	n-Bu	CH_3	CH_3	O	-$CONHSO_2NHC_2H_5$	H,H
74	n-Bu	CH_3	CH_3	O	-$CONHSO_2NHC_6H_5$	H,H
75	n-Bu	CH_3	CH_3	O	-$CONHSO_2NHCH_2C_6H_5$	H,H
76	n-Bu	CH_3	CH_3	O	-$CONHSO_2NH(4\text{-}C_5NH_4)$	H,H
77	n-Bu	CH_3	CH_3	O	-$C(OH)CH_3PO_3H_2$	H,H
78	n-Bu	CH_3	CH_3	O	-$C(OH)HPO_3H_2$	H,H
79	n-Bu	CH_3	CH_3	O	-$SO_2NHCOC_6H_5$	CH_3,H
80	n-Bu	CH_3	CH_3	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
81	n-Bu	CH_3	CH_3	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
82	n-Bu	CH_3	CH_3	O	-$SO_2NHCOCH_2C_6H_5$	CH_3,H
83	n-Bu	CH_3	CH_3	O	-$NHCONHSO_2C_2H_5$	CH_3,H
84	n-Bu	CH_3	CH_3	O	-$NHCONHSO_2(i\text{-}Bu)$	CH_3,H
85	n-Bu	CH_3	CH_3	O	-$NHCONHSO_2(n\text{-}C_5H_{11})$	CH_3,H
86	n-Bu	CH_3	CH_3	O	-$SO_2NHCONH(n\text{-}C_5H_{11})$	CH_3,H
87	n-Bu	CH_3	CH_3	O	-$SO_2NHCO(i\text{-}C_5H_{11})$	CH_3,H
88	n-Bu	CH_3	CH_3	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H

89	n-Bu	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	CH_3,H
90	n-Bu	CH_3	CH_3	O	$-SO_2NHCOC_6H_5C_6H_5$	Cl,H
91	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
92	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
93	n-Bu	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	Cl,H
94	n-Bu	CH_3	CH_3	O	$-NHPO_3H_2$	Cl,H
95	n-Bu	CH_3	CH_3	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
96	n-Bu	CH_3	CH_3	O	-SO$_2$NHCONH(i-Bu)	Cl,H
97	n-Bu	CH_3	CH_3	O	$-PO(OH)(n\text{-}C_5H_{11})$	Cl,H
98	n-Bu	CH_3	CH_3	O	$-PO(OH)(i\text{-}C_5H_{11})$	Cl,H
99	n-Bu	CH_3	CH_3	O	$-PO(OH)C_3H_7$	Cl,H
100	n-Bu	CH_3	CH_3	O	$-SO_2NHCH_2C_6H_5$	Cl,H
101	n-Bu	CH_3	CH_3	O	$-SO_2NH_2C_6H_5$	F,H
102	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	F,H
103	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	F,H
104	n-Bu	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	F,H
105	n-Bu	CH_3	CH_3	O	-SO$_2$NH(n-Bu)	F,H
106	n-Bu	CH_3	CH_3	O	-SO$_2$NH(i-Bu)	F,H
107	n-Bu	CH_3	CH_3	O	-SO$_2$NHCONH(i-Bu)	F,H
108	n-Bu	CH_3	CH_3	O	$-SO_2NH(n\text{-}C_5H_{11})$	F,H
109	n-Bu	CH_3	CH_3	O	$-SO_2NH(i\text{-}C_5H_{11})$	F,H
110	n-Bu	CH_3	CH_3	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	F,H
111	n-Bu	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	F,H
112	n-Bu	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	H,n-Pr
113	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,n-Pr
114	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,n-Pr
115	n-Bu	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	H,n-Pr
116	n-Bu	CH_3	CH_3	O	-SO$_2$NHCO(n-Bu)	H,n-Pr
117	n-Bu	CH_3	CH_3	O	-SO$_2$NHCONH(n-Bu)	H,n-Pr
118	n-Bu	CH_3	CH_3	O	-SO$_2$NHCONH(i-Bu)	H,n-Pr
119	n-Bu	CH_3	CH_3	O	$-SO_2NH(n\text{-}C_5H_{11})$	H,n-Pr
120	n-Bu	CH_3	CH_3	O	$-SO_2NH(i\text{-}C_5H_{11})$	H,n-Pr
121	n-Bu	CH_3	CH_3	O	$-SO_2NH(cy\text{-}C_3H_5)$	H,n-Pr
122	n-Bu	CH_3	CH_3	O	$-SO_2NHCH_2C_6H_5$	H,n-Pr

123	n-Bu	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	Cl,n-Pr
124	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	Cl,n-Pr
125	n-Bu	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	F,n-Pr
126	n-Bu	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	F,n-Pr
127	n-Bu	CH_3	CH_3	O	$-SO_2NH(n\text{-}Bu)$	Cl,n-Pr
128	n-Bu	CH_3	CH_3	O	$-SO_2NH(i\text{-}Bu)$	F,n-Pr
129	n-Bu	CH_3	CH_3	O	$-CONHSO_2(n\text{-}C_5H_{11})$	Cl,n-Pr
130	n-Bu	CH_3	CH_3	O	$-CONHSO_2(i\text{-}C_5H_{11})$	F,n-Pr
131	n-Bu	CH_3	CH_3	O	$-CONHSO_2(cy\text{-}C_3H_5)$	F,n-Pr
132	n-Bu	CH_3	CH_3	O	$-CONHSO_2CH_2C_6H_5$	Cl,n-Pr
133	Ph	CH_3	CH_3	O	$-SO_2NHCOC_6H_5$	H,H
134	Ph	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H
135	Ph	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
136	p-F-Ph	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	H,H
137	p-F-Ph	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}Bu)$	H,H
138	Ph	CH_3	CH_3	O	$-SO_2NHCO(i\text{-}Bu)$	H,H
139	iPr	CH_3	CH_3	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H
140	Ph	CH_3	CH_3	O	$-SO_2NHCO(i\text{-}C_5H_{11})$	H,H
141	Ph	CH_3	CH_3	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
142	Ph	CH_3	CH_3	O	$-SO_2NHCOCH_2C_6H_5$	H,H
143	n-Pr	$-(CH_2)_4-$		O	$-CONHSO_2CH_2C_6H_5$	H,H
144	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H
145	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
146	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCOCH_2C_6H_5$	H,H
147	n-Pr	$-(CH_2)_4-$		O	$-CH_2CO_2H$	H,H
148	n-Pr	$-(CH_2)_4-$		O	$-C(CF_3)_2OH$	H,H
149	n-Pr	$-(CH_2)_4-$		O	$-CONHNHSO_2CF_3$	H,H
150	n-Pr	$-(CH_2)_4-$		O	$-CONHOCH_2C_6H_5$	H,H
151	n-Pr	$-(CH_2)_4-$		O	$-CONHOCH_3$	H,H
152	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_6H_5$	CH_3,H
153	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
154	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
155	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCOCH_2C_6H_5$	CH_3,H
156	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO(n\text{-}Bu)$	CH_3,H

157	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCONH(n\text{-}Bu)$	CH3,H
158	n-Pr	$-(CH_2)_4-$	O	$-CONHSO_2(i\text{-}Bu)$	CH3,H
159	n-Pr	$-(CH_2)_4-$	O	$-CONHSO_2(n\text{-}C_5H_{11})$	CH3,H
160	n-Pr	$-(CH_2)_4-$	O	$-CONHSO_2(i\text{-}C_5H_{11})$	CH3,H
161	n-Pr	$-(CH_2)_4-$	O	$-CONHSO_2(cy\text{-}C_3H_5)$	CH3,H
162	n-Pr	$-(CH_2)_4-$	O	$-CONHSO_2CH_2C_6H_5$	CH3,H
163	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	Cl,H
164	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
165	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
166	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	Cl,H
167	n-Pr	$-(CH_2)_4-$	O	$-CONHSO_2NH(n\text{-}Bu)$	Cl,H
168	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCONH(n\text{-}Bu)$	Cl,H
169	n-Pr	$-(CH_2)_4-$	O	$-NHCONHSO_2(i\text{-}Bu)$	Cl,H
170	n-Pr	$-(CH_2)_4-$	O	$-NHCONHSO_2(n\text{-}C_5H_{11})$	Cl,H
171	n-Pr	$-(CH_2)_4-$	O	$-NHCONHSO_2(i\text{-}C_5H_{11})$	Cl,H
172	n-Pr	$-(CH_2)_4-$	O	$-NHCONHSO_2(cy\text{-}C_3H_5)$	Cl,H
173	n-Pr	$-(CH_2)_4-$	O	$-NHCONHSO_2CH_2C_6H_5$	Cl,H
174	n-Pr	$-(CH_2)_4-$	O	$-OP_3H_2$	F,H
175	n-Pr	$-(CH_2)_4-$	O	$-OSO_3H$	F,H
176	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	F,H
177	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	F,H
178	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}Bu)$	F,H
179	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCONH(n\text{-}Bu)$	F,H
180	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(i\text{-}Bu)$	F,H
181	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	F,H
182	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCONH(i\text{-}C_5H_{11})$	F,H
183	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCONH(cy\text{-}C_3H_5)$	F,H
184	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCH_2C_6H_5$	F,H
185	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	H,n-Pr
186	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,n-Pr
187	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,n-Pr
188	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	H,n-Pr
189	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}Bu)$	H,n-Pr
190	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCONH(n\text{-}Bu)$	H,n-Pr

191	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(i\text{-}Bu)$	H,n-Pr
192	n-Pr	$-(CH_2)_4-$	O	$-SO_2NH(n\text{-}C_5H_{11})$	H,n-Pr
193	n-Pr	$-(CH_2)_4-$	O	$-SO_2NH(i\text{-}C_5H_{11})$	H,n-Pr
194	n-Pr	$-(CH_2)_4-$	O	$-SO_2NH(cy\text{-}C_3H_5)$	H,n-Pr
195	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCH_2C_6H_5$	H,n-Pr
196	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	Cl,n-Pr
197	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	Cl,n-Pr
198	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	F,n-Pr
199	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	F,n-Pr
200	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}Bu)$	Cl,n-Pr
201	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOC_2H_5$	F,n-Pr
202	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCOCH_3$	Cl,n-Pr
203	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO(i\text{-}C_5H_{11})$	F,n-Pr
204	n-Pr	$-(CH_2)_4-$	O	$-CH_2CO_2H$	F,n-Pr
205	n-Pr	$-(CH_2)_4-$	O	$-CONHNHSO_2CF_3$	Cl,n-Pr
206	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(n\text{-}C_5H_{11})$	H,H
207	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
208	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	H,H
209	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(n\text{-}Bu)$	H,H
210	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(i\text{-}Bu)$	H,H
211	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(n\text{-}C_5H_{11})$	H,H
212	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(i\text{-}C_5H_{11})$	H,H
213	n-Bu	$-(CH_2)_4-$	O	$-COHSO_2(cy\text{-}C_3H_5)$	H,H
214	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	H,H
215	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	CH_3,H
216	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
217	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
218	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	CH_3,H
219	n-Bu	$-(CH_2)_4-$	O	$-NHCONHSO_2(n\text{-}Bu)$	CH_3,H
220	n-Bu	$-(CH_2)_4-$	O	$-NHCONHSO_2(i\text{-}Bu)$	CH_3,H
221	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCONH(i\text{-}Bu)$	CH_3,H
222	n-Bu	$-(CH_2)_4-$	O	$-SO_2NH(n\text{-}C_5H_{11})$	CH_3,H
223	n-Bu	$-(CH_2)_4-$	O	$-SO_2NH(i\text{-}C_5H_{11})$	CH_3,H
224	n-Bu	$-(CH_2)_4-$	O	$-SO_2NH_2(cy\text{-}C_3H_5)$	CH_3,H

225	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCH_2C_6H_5$	CH_3,H
226	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	Cl,H
227	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(n-C_5H_{11})$	Cl,H
228	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(cy-C_3H_5)$	Cl,H
229	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOH_2C_6H_5$	Cl,H
230	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2HCO(n-Bu)$	Cl,H
231	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCONH(n-Bu)$	Cl,H
232	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(i-Bu)$	Cl,H
233	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	Cl,H
234	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	Cl,H
235	n-Bu	$-(CH_2)_4-$	O	$-CH_2$(5-Tetrazoyl)	Cl,H
236	n-Bu	$-(CH_2)_4-$	O	-CONH(5-Tetrazoyl)	Cl,H
237	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	F,H
238	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(n-C_5H_{11})$	F,H
239	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(cy-C_3H_5)$	F,H
240	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	F,H
241	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(n-Bu)$	F,H
242	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCONH(n-Bu)$	F,H
243	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(i-Bu)$	F,H
244	n-Bu	$-(CH_2)_4-$	O	$-SO_2NH(n-C_5H_{11})$	F,H
245	n-Bu	$-(CH_2)_4-$	O	$-SO_2NH(i-C_5H_{11})$	F,H
246	n-Bu	$-(CH_2)_4-$	O	$-SO_2NH(cy-C_3H_5)$	F,H
247	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCH_2C_6H_5$	F,H
248	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	H,n-Pr
249	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(n-C_5H_{11})$	H,n-Pr
250	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(cy-C_3H_5)$	H,n-Pr
251	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	H,n-Pr
252	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2NHC_2H_4Cl$	H,n-Pr
253	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(i-Bu)$	H,n-Pr
254	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(n-C_5H_{11})$	H,n-Pr
255	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(i-C_5H_{11})$	H,n-Pr
256	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2(cy-C_3H_5)$	H,n-Pr
257	n-Bu	$-(CH_2)_4-$	O	$-CONHSO_2CH_2C_6H_5$	H,n-Pr
258	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOC_6H_5$	Cl,n-Pr

259	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(n-C_5H_{11})$	Cl,n-Pr
260	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(cy-C_3H_5)$	F,n-Pr
261	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCOCH_2C_6H_5$	F,n-Pr
262	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(n-Bu)$	Cl,n-Pr
263	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(i-Bu)$	F,n-Pr
264	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	Cl,n-Pr
265	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	F,n-Pr
266	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO(i-C_5H_{11})$	F,n-Pr
267	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCO(cy-C_3H_5)$	F,n-Pr
268	n-Bu	$-(CH_2)_4-$	O	$-NHSO_2NHCOCH_2C_6H_5$	Cl,n-Pr
269	n-Pr	$-(CH_2)_5-$	O	$-CONHSO_2CH_2C_6H_5$	H,H
270	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	H,H
271	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-C_5H_{11})$	H,H
272	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(cy-C_3H_5)$	H,H
273	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	H,H
274	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	CH_3,H
275	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-C_5H_{11})$	CH_3,H
276	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(cy-C_3H_5)$	CH_3,H
277	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	CH_3,H
278	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-Bu)$	CH_3,H
279	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCONH(n-Bu)$	CH_3,H
280	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-Bu)$	CH_3,H
281	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	CH_3,H
282	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	CH_3,H
283	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(cy-C_3H_5)$	CH_3,H
284	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCOCH_2C_6H_5$	CH_3,H
285	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	Cl,H
286	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-C_5H_{11})$	Cl,H
287	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(cy-C_3H_5)$	Cl,H
288	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	Cl,H
289	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-Bu)$	Cl,H
290	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-Bu)$	Cl,H
291	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCONH(i-Bu)$	Cl,H
292	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-C_5H_{11})$	Cl,H

293	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	Cl,H
294	n-Pr	$-(CH_2)_5-$	O	$-SO_2NH(cy-C_3H_5)$	Cl,H
295	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCH_2C_6H_5$	Cl,H
296	n-Pr	$-(CH_2)_5-$		$-SO_2NHCOC_6H_5$	F,H
297	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-C_5H_{11})$	F,H
298	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(cy-C_3H_5)$	F,H
299	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	F,H
300	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-Bu)$	F,H
301	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCONH(n-Bu)$	F,H
302	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-Bu)$	F,H
303	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	F,H
304	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	F,H
305	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(cy-C_3H_5)$	F,H
306	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCOCH_2C_6H_5$	F,H
307	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	H,n-Pr
308	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-C_5H_{11})$	H,n-Pr
309	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(cy-C_3H_5)$	H,n-Pr
310	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	H,n-Pr
311	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-Bu)$	H,n-Pr
312	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCONH(n-Bu)$	H,n-Pr
313	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-Bu)$	H,n-Pr
314	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	H,n-Pr
315	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	H,n-Pr
316	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(cy-C_3H_5)$	H,n-Pr
317	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCOCH_2C_6H_5$	H,n-Pr
318	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	Cl,n-Pr
319	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(n-C_5H_{11})$	Cl,n-Pr
320	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO(cy-C_3H_5)$	F,n-Pr
321	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	F,n-Pr
322	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-Bu)$	Cl,n-Pr
323	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCONH(n-Bu)$	Cl,n-Pr
324	n-Pr	$(CH_2)_5-$	O	$-NHSO_2NHCO(i-Bu)$	F,n-Pr
325	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	Cl,n-Pr
326	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	F,n-Pr

327	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	F,n-Pr
328	n-Pr	$-(CH_2)_5-$	O	$-NHSO_2NHCOCH_2C_6H_5$	Cl,n-Pr
329	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	H,H
330	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H
331	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
332	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	H,H
333	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n\text{-}Bu)$	H,H
334	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i\text{-}Bu)$	H,H
335	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
336	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
337	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
338	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCOCH_2C_6H_5$	H,H
339	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	CH_3,H
340	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
341	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
342	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	CH_3,H
343	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n\text{-}Bu)$	CH_3,H
344	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCONH(n\text{-}Bu)$	CH_3,H
345	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i\text{-}Bu)$	CH_3,H
346	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
347	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	CH_3,H
348	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
349	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCOCH_2C_6H_5$	CH_3,H
350	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCOC_6H_5$	Cl,H
351	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
352	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
353	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCOCH_2C_6H_5$	Cl,H
354	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n\text{-}Bu)$	Cl,H
355	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i\text{-}Bu)$	Cl,H
356	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
357	n-Bu	$-(CH_2)_5-$	O	$-SO_2NHCONH(n\text{-}C_5H_{11})$	Cl,H
358	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	Cl,H
359	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
360	n-Bu	$-(CH_2)_5-$	O	$-NHSO_2NHCOCH_2C_6H_5$	Cl,H

361	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCOC_6H_5$	F,H
362	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	F,H
363	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	F,H
364	n-Bu	-$(CH_2)_5$-		-$SO_2NHCOCH_2C_6H_5$	F,H
365	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO$(n-Bu)	F,H
366	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO$(i-Bu)	F,H
367	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	F,H
368	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCONH(n\text{-}C_5H_{11})$	F,H
369	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	F,H
370	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	F,H
371	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCOCH_2C_6H_5$	F,H
372	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCOC_6H_5$	H,n-Pr
373	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,n-Pr
374	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,n-Pr
375	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCOCH_2C_6H_5$	H,-Pr
376	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO$(n-Bu)	H,n-Pr
377	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO$(i-Bu)	H,n-Pr
378	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCONH(n\text{-}C_5H_{11})$	H,n-Pr
379	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,n-Pr
380	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	H,n-Pr
381	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,n-Pr
382	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,n-Pr
383	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCOC_6H_5$	Cl,n-Pr
384	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	Cl,n-Pr
385	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	F,n-Pr
386	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCOCH_2C_6H_5$	F,n-Pr
387	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO$(n-Bu)	Cl,n-Pr
388	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCONH$(n-Bu)	Cl,n-Pr
389	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCONH$(i-Bu)	Cl,n-Pr
390	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO$(i-Bu)	F,n-Pr
391	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	Cl,n-Pr
392	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	F,n-Pr
393	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	F,n-Pr
394	n-Bu	-$(CH_2)_5$-	O	-$NHSO_2NHCOCH_2C_6H_5$	Cl,n-Pr

395	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$CONHSO_2CH_2C_6H_5$	H,H
396	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,H
397	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
398	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
399	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,H
400	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}Bu)$	H,H
401	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}Bu)$	H,H
402	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
403	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
404	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
405	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,H
406	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	CH_3,H
407	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
408	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
409	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	CH_3,H
410	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}Bu)$	CH_3,H
411	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCONH(n\text{-}Bu)$	CH_3,H
412	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}Bu)$	CH_3,H
413	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
414	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	CH_3,H
415	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
416	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	CH_3,H
417	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	Cl,H
418	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
419	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
420	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	Cl,H
421	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}Bu)$	Cl,H
422	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}Bu)$	Cl,H
423	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCONH(i\text{-}Bu)$	Cl,H
424	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
425	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	Cl,H
426	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
427	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	Cl,H
428	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	F,H

429	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(n-C_5H_{11})$	F,H
430	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(cy-C_3H_5)$	F,H
431	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOCH_2C_6H_5$	F,H
432	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n-Bu)$	F,H
433	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCONH(n-Bu)$	F,H
434	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i-Bu)$	F,H
435	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	F,H
436	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	F,H
437	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(cy-C_3H_5)$	F,H
438	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCOCH_2C_6H_5$	F,H
439	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOC_6H_5$	H,n-Pr
440	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(n-C_5H_{11})$	H,n-Pr
441	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(cy-C_3H_5)$	H,n-Pr
442	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOCH_2C_6H_5$	H,n-Pr
443	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n-Bu)$	H,n-Pr
444	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCONH(n-Bu)$	H,n-Pr
445	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i-Bu)$	H,n-Pr
446	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	H,n-Pr
447	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	H,n-Pr
448	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(cy-C_3H_5)$	H,n-Pr
449	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCOCH_2C_6H_5$	H,n-Pr
450	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOC_6H_5$	Cl,n-Pr
451	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(n-C_5H_{11})$	Cl,n-Pr
452	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(cy-C_3H_5)$	F,n-Pr
453	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOCH_2C_6H_5$	F,n-Pr
454	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n-Bu)$	Cl,n-Pr
455	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCONH(n-Bu)$	Cl,n-Pr
456	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i-Bu)$	F,n-Pr
457	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n-C_5H_{11})$	Cl,n-Pr
458	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i-C_5H_{11})$	F,n-Pr
459	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(cy-C_3H_5)$	F,n-Pr
460	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCOCH_2C_6H_5$	Cl,n-Pr
461	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOC_6H_5$	H,H
462	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(n-C_5H_{11})$	H,H

463	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
464	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOCH_2C_6H_5$	H,H
465	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n\text{-}Bu)$	H,H
466	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i\text{-}Bu)$	H,H
467	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
468	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
469	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
470	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCOCH_2C_6H_5$	H,H
471	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOC_6H_5$	CH_3,H
472	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
473	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
474	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOCH_2C_6H_5$	CH_3,H
475	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n\text{-}Bu)$	CH_3,H
476	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCONH(n\text{-}Bu)$	CH_3,H
477	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i\text{-}Bu)$	CH_3,H
478	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	CH_3,H
479	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	CH_3,H
480	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	CH_3,H
481	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCOCH_2C_6H_5$	CH_3,H
482	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOC_6H_5$	Cl,H
483	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
484	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
485	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOCH_2C_6H_5$	Cl,H
486	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n\text{-}Bu)$	Cl,H
487	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i\text{-}Bu)$	Cl,H
488	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	Cl,H
489	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCONH(n\text{-}C_5H_{11})$	Cl,H
490	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	Cl,H
491	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	Cl,H
492	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-NHSO_2NHCOCH_2C_6H_5$	Cl,H
493	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOC_6H_5$	F,H
494	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	F,H
495	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	F,H
496	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCOCH_2C_6H_5$	F,H

497	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	F,H
498	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	F,H
499	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(n-C_5H_{11})	F,H
500	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCONH$(n-C_5H_{11})	F,H
501	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(i-C_5H_{11})	F,H
502	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(cy-C_3H_5)	F,H
503	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	F,H
504	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,n-Pr
505	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO(n-C_5H_{11})	H,n-Pr
506	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO(cy-C_3H_5)	H,n-Pr
507	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,n-Pr
508	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	H,n-Pr
509	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	H,n-Pr
510	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCONH$(n-C_5H_{11})	H,n-Pr
511	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(n-C_5H_{11})	H,n-Pr
512	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(i-C_5H_{11})	H,n-Pr
513	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(cy-C_3H_5)	H,n-Pr
514	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,n-Pr
515	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	Cl,n-Pr
516	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO(n-C_5H_{11})	Cl,n-Pr
517	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO(cy-C_3H_5)	F,n-Pr
518	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	F,n-Pr
519	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	Cl,n-Pr
520	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCONH$(n-Bu)	Cl,n-Pr
521	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCONH$(i-Bu)	Cl,n-Pr
522	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	F,n-Pr
523	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(n-C_5H_{11})	Cl,n-Pr
524	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(i-C_5H_{11})	F,n-Pr
525	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCO$(cy-C_3H_5)	F,n-Pr
526	n-Bu	-$(CH_2)S(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	Cl,n-Pr
527	n-Pr	-$(CH_2)O(CH_2)_2$-	O	–$CONHSO_2CH_2C_6H_5$	H,H
528	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,H
529	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-SO_2NHCO(n-C_5H_{11})	H,H
530	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-SO_2NHCO(cy-C_3H_5)	H,H

531	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,H
532	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	H,H
533	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	H,H
534	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
535	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
536	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
537	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,H
538	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$CONHSO_2CH_2C_6H_5$	H,H
539	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,H
540	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
541	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
542	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,H
543	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	H,H
544	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	H,H
545	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
546	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
547	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
548	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,H
549	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$CONHSO_2CH_2C_6H_5$	H,H
550	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,H
551	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
552	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
553	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,H
554	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	H,H
555	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	H,H
556	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
557	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
558	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
559	n-Pr	-$(CH_2)SO(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,H
560	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$NHSO_2CH_2C_6H_5$	H,H
561	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,H
562	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
563	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
564	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,H

565	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	H,H
566	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	H,H
567	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
568	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
569	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
570	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,H
571	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$CONHSO_2CH_2C_6H_5$	H,H
572	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,H
573	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
574	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
575	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,H
576	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	H,H
577	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	H,H
578	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
579	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-NHSO2NHCO(i-C_5H_{11})	H,H
580	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
581	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,H
582	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$CONHSO_2CH_2C_6H_5$	H,H
583	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$SO_2NHCOC_6H_5$	H,H
584	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
585	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	–$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
586	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$SO_2NHCOCH_2C_6H_5$	H,H
587	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$NHSO_2NHCO$(n-Bu)	H,H
588	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$NHSO_2NHCO$(i-Bu)	H,H
589	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
590	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
591	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
592	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$NHSO_2NHCOCH_2C_6H_5$	H,H
593	n-Pr	CF_3 CF_3	O	-$SO_2NHCOC_6H_5$	H,H
594	n-Pr	CF_3 CF_3	O	-$SO_2NHCO(n\text{-}C_5H_{11})$	H,H
595	n-Pr	CF_3 CF_3	O	-$SO_2NHCO(cy\text{-}C_3H_5)$	H,H
596	n-Pr	CF_3 CF_3	O	-$SO_2NHCOCH_2C_6H_5$	H,H
597	n-Pr	CF_3 CF_3	O	-$NHSO_2NHCO$(n-Bu)	H,H
598	n-Pr	CF_3 CF_3	O	-$NHSO_2NHCO$(i-Bu)	H,H

599	n-Pr	CF_3	CF_3	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
600	n-Pr	CF_3	CF_3	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
601	n-Pr	CF_3	CF_3	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
602	n-Pr	CF_3	CF_3	O	$-NHSO_2NHCOCH_2C_6H_5$	H,H
603	n-Pr	Ph	Ph	O	$-SO_2NHCOC_6H_5$	H,H
604	n-Pr	Ph	Ph	O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H
605	n-Pr	Ph	Ph	O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
606	n-Pr	Ph	Ph	O	$-SO_2NHCOCH_2C_6H_5$	H,H
607	n-Pr	Ph	Ph	O	$-NHSO_2NHCO(n\text{-}Bu)$	H,H
608	n-Pr	Ph	Ph	O	$-NHSO_2NHCO(i\text{-}Bu)$	H,H
609	n-Pr	Ph	Ph	O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
610	n-Pr	Ph	Ph	O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
611	n-Pr	Ph	Ph	O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
612	n-Pr	Ph	Ph	O	$-NHSO_2NHCOCH_2C_6H_5$	H,H
613	n-Pr	$-(CH_2)_2$		O	$-SO_2NHCOC_6H_5$	H,H
614	n-Pr	$-(CH_2)_2$		O	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H
615	n-Pr	$-(CH_2)_2$		O	$-SO_2NHCO(cy\text{-}C_3H_5)$	H,H
616	n-Pr	$-(CH_2)_2$		O	$-SO_2NHCOCH_2C_6H_5$	H,H
617	n-Pr	$-(CH_2)_2$		O	$-NHSO_2NHCO(n\text{-}Bu)$	H,H
618	n-Pr	$-(CH_2)_2$		O	$-NHSO_2NHCO(i\text{-}Bu)$	H,H
619	n-Pr	$-(CH_2)_2$		O	$-NHSO_2NHCO(n\text{-}C_5H_{11})$	H,H
620	n-Pr	$-(CH_2)_2$		O	$-NHSO_2NHCO(i\text{-}C_5H_{11})$	H,H
621	n-Pr	$-(CH_2)_2$		O	$-NHSO_2NHCO(cy\text{-}C_3H_5)$	H,H
622	n-Pr	$-(CH_2)_2$		O	$-NHSO_2NHCOCH_2C_6H_5$	H,H
623	n-Pr	CH_3	CH_3	S	$-SO_2NHCOC_6H_5$	H,H
624	n-Pr	CH_3	CH_3	S	$-CONHSO_2CH_2C_6H_5$	H,H
625	n-Pr	CH_3	CH_3	S	$-SO_2NHCO(n\text{-}C_5H_{11})$	H,H

EXAMPLE 626

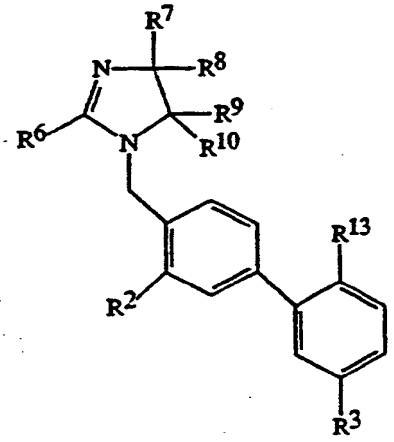
N-((4'-(((4-oxo-2-propyl-1,3-diazaspiro((4.4))non-1-en-3-yl)methyl))((1,1'-biphenyl-2-ylsulfonyl))-carbamicacid(n-butyl)ester

N-((4'-(((4-oxo-2-propyl-1,3-diazaspiro((4.4))non-1-en-3-yl-methyl))((1,1'-biphenyl-2-ylsulfonyl))-2-sulfonamide (100 mg, 0.20 mmol) was dissolved in methylene chloride (10 mL). 4-Dimethylaminopyridine (32 mg, 0.22 mmol) and

pyridine(1 mL) were added. n-Butyl chloroformate (0.1 mL, 0.6 mmol) was added dropwise. The reaction mixture was allowed to stir at room temperature under N_2 overnight. The mixture was diluted with methylene chloride and washed with water and brine. It was filtered through phase separator paper and concentrated. The residue was chromatographed on silica gel eluting first with ethyl acetate-methylene chloride (1:1) and then with methanol- methylene chloride (5%) to give 45 mg of light yellow foam. MS m/e 526.2 $(M+H)^+$, ^{1}HNMR ($CDCl_3$/TMS) δ 0.86 (t, 3H, CH_3), 0.95 (t, 3H, CH_3), 1.22 (m, 2H, CH_2), 1.48 (m, 2H,CH_2), 1.69 (m, 2H, CH_2), 1.80-2.18 (m, 8H, CH_2), 2.37 (t, 2H, CH_2), 4.01 (t, 2H, CH_2), 4.77 (s, 2H, $ArCH_2$), 7.18-7.36 (m, 5H, ArH), 7.50-7.70 (m, 2H, ArH), 8.24 (d, 1H,t ArH).

Compounds 626-982 in Table 2 can be prepared by the procedures described in Examples 1, 2 and 626 employing the appropriately substituted imidazolines and benzyl halides or mesylates.

TABLE 2



Ex.	R^6	R^7	R^8	R^9, R^{10}	R^{13}	R^2, R^3	$MS(M+H)^+$
626	n-Pr	-$(CH_2)_4$-		O	-SO_2NHCO_2(n-C_4H_9)	H,H	526
627	n-Pr	CH_3	CH_3	O	-SO_2NHCO_2(n-C_4H_9)	H,H	
628	n-Pr	CH_3	CH_3	O	-SO_2NHCO_2(n-C_4H_9)	H,H	
629	n-Pr	CH_3	CH_3	O	-SO_2NHCO_2(n-C_5H_{11})	H,H	
630	n-Pr	CH_3	CH_3	O	-SO_2NHCO_2(i-C_5H_{11})	H,H	
631	n-Pr	CH_3	CH_3	O	-SO_2NHCO_2(cy-C_3H_5)	H,H	

632	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
633	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	CH_3,H
634	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	CH_3,H
635	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	CH_3,H
636	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	CH_3,H
637	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	CH_3,H
638	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	CH_3,H
639	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,H
640	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	Cl,H
641	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,H
642	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	Cl,H
643	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	Cl,H
644	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,H
645	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	F,H
646	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	F,H
647	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	F,H
648	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	F,H
649	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	F,H
650	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
651	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,n-Pr
652	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,n-Pr
653	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,n-Pr
654	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,n-Pr
655	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,n-Pr
656	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	H,n-Pr
657	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,n-Pr
658	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	F,n-Pr
659	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,n-Pr
660	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	F,n-Pr
661	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	F,n-Pr
662	n-Pr	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
663	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,H
664	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,H
665	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,H

666	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,H
667	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,H
668	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
669	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	CH_3,H
670	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	CH_3,H
671	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	CH_3,H
672	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	CH_3,H
673	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	CH_3,H
674	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	CH_3,H
675	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,H
676	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	Cl,H
677	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,H
678	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	Cl,H
679	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	Cl,H
680	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,H
681	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	F,H
682	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	F,H
683	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	F,H
684	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	F,H
685	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	F,H
686	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
687	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,n-Pr
688	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,n-Pr
689	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,n-Pr
690	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,n-Pr
691	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,n-Pr
692	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	H,n–Pr
693	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,n-Pr
694	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	F,n-Pr
695	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,n-Pr
696	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	F,n-Pr
697	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	F,n-Pr
698	n-Bu	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
699	p-F-Ph	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,H

700	Ph	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,H
701	iPr	CH_3	CH_3	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,H
702	Ph	CH_3	CH_3	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,H
703	Ph	CH_3	CH_3	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,H
704	Ph	CH_3	CH_3	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
705	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,H
706	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,H
707	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,H
708	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,H
709	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
710	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	CH_3,H
711	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	CH_3,H
712	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	CH_3,H
713	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	CH_3,H
714	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2CH_2C_6H_5$	CH_3,H
715	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,H
716	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	Cl,H
717	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,H
718	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	Cl,H
719	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	Cl,H
720	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,H
721	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	F,H
722	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	F,H
723	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	F,H
724	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	F,H
725	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	F,H
726	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
727	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,n-Pr
728	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,n-Pr
729	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,n-Pr
730	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,n-Pr
731	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,n-Pr
732	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2CH_2C_6H_5$	H,n-Pr
733	n-Pr	$-(CH_2)_4-$		O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,n-Pr

734	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	F,n-Pr
735	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,n-Pr
736	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	F,n-Pr
737	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	F,n-Pr
738	n-Pr	$-(CH_2)_4-$	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
739	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,H
740	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,H
741	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,H
742	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,H
743	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,H
744	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
745	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	CH_3,H
746	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	CH_3,H
747	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	CH_3,H
748	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	CH_3,H
749	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	CH_3,H
750	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2CH_2C_6H_5$	CH_3,H
751	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,H
752	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	Cl,H
753	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,H
754	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	Cl,H
755	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	Cl,H
756	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,H
757	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	F,H
758	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	F,H
759	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	F,H
760	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	F,H
761	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	F,H
762	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
763	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,n-Pr
764	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,n-Pr
765	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,n-Pr
766	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,n-Pr
767	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,n-Pr

768	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2CH_2C_6H_5$	H,n-Pr
769	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n-C_4H_9)$	Cl,n-Pr
770	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i-C_4H_9)$	F,n-Pr
771	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	Cl,n-Pr
772	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	F,n-Pr
773	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	F,n-Pr
774	n-Bu	$-(CH_2)_4-$	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
775	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_4H_9)$	H,H
776	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_4H_9)$	H,H
777	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	H,H
778	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	H,H
779	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	H,H
780	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
781	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_4H_9)$	CH_3,H
782	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_4H_9)$	CH_3,H
783	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	CH_3,H
784	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	CH_3,H
785	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	CH_3,H
786	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2CH_2C_6H_5$	CH_3,H
787	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_4H_9)$	Cl,H
788	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_4H_9)$	Cl,H
789	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	Cl,H
790	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	Cl,H
791	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	Cl,H
792	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,H
793	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_4H_9)$	F,H
794	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_4H_9)$	F,H
795	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	F,H
796	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	F,H
797	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	F,H
798	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
799	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_4H_9)$	H,n-Pr
800	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(i-C_4H_9)$	H,n-Pr
801	n-Pr	$-(CH_2)_5-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	H,n-Pr

802	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_5H_{11})$	H,n-Pr
803	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2(cy\text{-}C_3H_5)$	H,n-Pr
804	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_5H_5$	H,n-Pr
805	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,n-Pr
806	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_4H_9)$	F,n-Pr
807	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,n-Pr
808	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_5H_{11})$	F,n-Pr
809	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2(cy\text{-}C_3H_5)$	F,n-Pr
810	n-Pr	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
811	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_4H_9)$	H,H
812	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_4H_9)$	H,H
813	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_5H_{11})$	H,H
814	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_5H_{11})$	H,H
815	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(cy\text{-}C_3H_5)$	H,H
816	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
817	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_4H_9)$	CH_3,H
818	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_4H_8)$	CH_3,H
819	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_5H_{11})$	CH_3,H
820	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_5H_{11})$	CH_3,H
821	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(cy\text{-}C_3H_5)$	CH_3,H
822	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_6H_5$	CH_3,H
823	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_4H_9)$	Cl,H
824	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_4H_9)$	Cl,H
825	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_5H_{11})$	Cl,H
826	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_5H_{11})$	Cl,H
827	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(cy\text{-}C_3H_5)$	Cl,H
828	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_6H_5$	Cl,H
829	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2C_6H_5$	F,H
830	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_4H_9)$	F,H
831	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_4H_9)$	F,H
832	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(n\text{-}C_5H_{11})$	F,H
833	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(i\text{-}C_5H_{11})$	F,H
834	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2(cy\text{-}C_3H_5)$	F,H
835	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_6H_5$	F,H

836	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(n-C_4H_9)	H,n-Pr
837	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(i-C_4H_9)	H,n-Pr
838	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(n-C_5H_{11})	H,n-Pr
839	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(i-C_5H_{11})	H,n-Pr
840	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(cy-C_3H_5)	H,n-Pr
841	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,n-Pr
842	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(n-C_4H_9)	Cl,n-Pr
843	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(i-C_4H_9)	F,n-Pr
844	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(n-C_5H_{11})	Cl,n-Pr
845	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(i-C_5H_{11})	F,n-Pr
846	n-Bu	-$(CH_2)_5$-	O	-SO_2NHCO_2(cy-C_3H_5)	F,n-Pr
847	n-Bu	-$(CH_2)_5$-	O	-$SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
848	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
849	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	H,H
850	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(i-C_4H_9)	H,H
851	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_5H_{11})	H,H
852	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	H,H
853	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	H,H
854	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
855	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	CH_3,H
856	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(i-C_4H_9)	CH_3,H
857	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_5H_{11})	CH_3,H
858	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	CH_3,H
859	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	CH_3,H
860	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	CH_3,H
861	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	Cl,H
862	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	Cl,H
863	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_5H_{11})	Cl,H
864	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	Cl,H
865	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	Cl,H
866	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	Cl,H
867	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	F,H
868	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2NH(n-C_4H_9)	F,H
869	n-Pr	-$(CH_2)S(CH_2)_2$-	O	-SO_2NHCO_2(i-C_4H_9)	F,H

870	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	F,H
871	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	F,H
872	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	F,H
873	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
874	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	H,n-Pr
875	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2NH(n-C_4H_9)$	H,n-Pr
876	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	H,n-Pr
877	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	H,n-Pr
878	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	H,n-Pr
879	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	H,n-Pr
880	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	H,n-Pr
881	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	Cl,n-Pr
882	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	F,n-Pr
883	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	Cl,n-Pr
884	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	F,n-Pr
885	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	F,n-Pr
886	n-Pr	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
887	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	H,H
888	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	H,H
889	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	H,H
890	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	H,H
891	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	H,H
892	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
893	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	CH_3,H
894	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	CH_3,H
895	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	CH_3,H
896	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	CH_3,H
897	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	CH_3,H
898	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	CH_3,H
899	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	Cl,H
900	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	Cl,H
901	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	Cl,H
902	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	Cl,H
903	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	Cl,H

904	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,H
905	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	F,H
906	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	F,H
907	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	F,H
908	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	F,H
909	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	F,H
910	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
911	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	H,n-Pr
912	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	H,n-Pr
913	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	H,n-Pr
914	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	H,n-Pr
915	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	H,n-Pr
916	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	H,n-Pr
917	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	Cl,n-Pr
918	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	F,n-Pr
919	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	Cl,n-Pr
920	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	F,n-Pr
921	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	F,n-Pr
922	n-Bu	$-(CH_2)S(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	Cl,n-Pr
923	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	H,H
924	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	H,H
925	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	H,H
926	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	H,H
927	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	H,H
928	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
929	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	F,H
930	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	F,H
931	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	F,H
932	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_5H_{11})$	F,H
933	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(cy-C_3H_5)$	F,H
934	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2CH_2C_6H_5$	F,H
935	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_4H_9)$	Cl,H
936	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(i-C_4H_9)$	Cl,H
937	n-Pr	$-(CH_2)O(CH_2)_2-$	O	$-SO_2NHCO_2(n-C_5H_{11})$	Cl,H

938	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	Cl,H
939	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	Cl,H
940	n-Pr	-$(CH_2)O(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	Cl,H
941	n-Pr	-$(CH_2)SO_2(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	H,H
942	n-Pr	-$(CH_2)SO_2(CH_2)_2$-	O	-SO_2NHCO_2(i-C_4H_9)	H,H
943	n-Pr	-$(CH_2)SO_2(CH_2)_2$-	O	-SO_2NHCO_2(n-C_5H_{11})	H,H
944	n-Pr	-$(CH_2)SO_2(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	H,H
945	n-Pr	-$(CH_2)SO_2(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	H,H
946	n-Pr	-$(CH_2)SO_2(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
947	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	H,H
948	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-SO_2NHCO_2(i-C_4H_9)	H,H
949	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-SO_2NHCO_2(n-C_5H_{11})	H,H
950	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	H,H
951	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	H,H
952	n-Pr	-$(CH_2)NCOMe(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
953	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	H,H
954	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-SO_2NHCO_2(i-C_4H_9)	H,H
955	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
956	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	H,H
957	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	H,H
958	n-Pr	-$(CH_2)NCOPh(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
959	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-SO_2NHCO_2(n-C_4H_9)	F,H
960	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-SO_2NHCO_2(i-C_4H_9)	F,H
961	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-SO_2NHCO_2(n-C_5H_{11})	F,H
962	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-SO_2NHCO_2(i-C_5H_{11})	F,H
963	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-SO_2NHCO_2(cy-C_3H_5)	F,H
964	n-Pr	-$(CH_2)NCH_2Ph(CH_2)_2$-	O	-$SO_2NHCO_2CH_2C_6H_5$	F,H
965	n-Pr	CF_3 CF_3	O	-SO_2NHCO_2(n-C_4H_9)	H,H
966	n-Pr	CF_3 CF_3	O	-SO_2NHCO_2(i-C_4H_9)	H,H
967	n-Pr	CF_3 CF_3	O	-SO_2NHCO_2(n-C_5H_{11})	H,H
968	n-Pr	CF_3 CF_3	O	-SO_2NHCO_2(i-C_5H_{11})	H,H
969	n-Pr	CF_3 CF_3	O	-SO_2NHCO_2(cy-C_3H_5)	H,H
970	n-Pr	CF_3 CF_3	O	-$SO_2NHCO_2CH_2C_6H_5$	H,H
971	n-Pr	Ph Ph	O	-SO_2NHCO_2(n-C_4H_9)	H,H

972	n-Pr	Ph	Ph	O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,H
973	n-Pr	Ph	Ph	O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,H
974	n-Pr	Ph	Ph	O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,H
975	n-Pr	Ph	Ph	O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,H
976	n-Pr	Ph	Ph	O	$-SO_2NHCO_2CH_2C_6H_5$	H,H
977	n-Pr	$-(CH_2)_2-$		O	$-SO_2NHCO_2(n\text{-}C_4H_9)$	H,H
978	n-Pr	$-(CH_2)_2-$		O	$-SO_2NHCO_2(i\text{-}C_4H_9)$	H,H
979	n-Pr	$-(CH_2)_2-$		O	$-SO_2NHCO_2(n\text{-}C_5H_{11})$	H,H
980	n-Pr	$-(CH_2)_2-$		O	$-SO_2NHCO_2(i\text{-}C_5H_{11})$	H,H
981	n-Pr	$-(CH_2)_2-$		O	$-SO_2NHCO_2(cy\text{-}C_3H_5)$	H,H
982	n-Pr	$-(CH_2)_2-$		O	$-SO_2NHCO_2CH_2C_6H_5$	H,H

Utility

Angiotensin II (AII) produces numerous biological responses (e.g., vasoconstriction) through stimulation of its receptors on cell membranes. For the purpose of identifying compounds such as AII antagonists which are capable of interacting with the AII receptor, a ligand-receptor binding assay was utilized for the initial screen. The assay was carried out according to the method described by Chiu et al., Receptor, 1, 33 (1990). In brief, aliquots of a freshly prepared particulate fraction of rat adrenal cortex were incubated with 0.05 nM [^{125}I] AII and varying concentrations of potential AII antagonists in a Tris buffer. After a 1 h incubation the reaction was terminated by addition of cold assay buffer. The bound and free radioactivity were rapidly separated through glass-fiber filters, and the trapped radioactivity was quantitated by scintillation counting. The inhibitory concentration (Ic_{50}) of potential AII antagonists which gives 50% displacement of the total specifically bound [^{125}I] AII is presented as a measure of the affinity of such compound for the AII receptor.

Using the assay method described above, the compounds of this invention are found to exhibit an activity of at least Ic_{50} <10 micromolar, thereby demonstrating and confirming the activity of these compounds as effective AII antagonists.

The potential antihypertensive effects of the compounds of this invention may be demonstrated by administering the compounds to awake rats made hypertensive by ligation of the left renal artery [Cangiano et al., *J. Pharmacol. Exp.*

Ther.. 208, 310 (1979)]. This procedure increases blood pressure by increasing renin production with consequent elevation of AII levels. Compounds are administered intravenously via a cannula in the jugular vein at 10 mg/kg. Arterial blood pressure is continuously measured directly through a carotid artery cannula and recorded using a pressuretransducer and a polygraph. Blood pressure levels after treatment are compared to pretreatment levels to determine the antihypertensive effects of the compounds.

Using the in vivo methodology described above, the compounds of this invention are found to exhibit an activity (intravenous) which is 10 mg/kg or less, and/or an activity (oral) which is 100 mg/kg or less, thereby demonstrating and confirming the utility of these compounds as effective agents in lowering blood pressure.

The compounds of the invention are useful in treating hypertension. They are also of value in the management of acute and chronic congestive heart failure and angina. These compounds may also be expected to be useful in the treatment of primary and secondary hyperaldosteronism; renal diseases such as diabetic nephropathy, glomerulonephritis, glomerular sclerosis, nephrotic syndrome, hypertensive nephrosclerosis, end stage renal disease, used in renal transplant therapy, and to treat renovascular hypertension, scleroderma, left ventricular dysfunction, systolic and diastolic dysfunction, diabetic retinopathy and in the management of vascular disorders such as migraine, Raynaud's disease, and as prophylaxis to minimize the atherosclerotic process and neointimal hyperplasia following angioplasty or vascular injury and to retard the onset of type II diabetes. The application of thecompounds of this invention for these and similar disorders will be apparent to those skilled in the art.

The compounds of this invention are also useful to treat elevated intraocular pressure and to enhance retinal blood flow and can be administered to patients in need of such treatment with typical pharmaceutical formulations such as tablets, capsules, injectables and the like as well as topical ocular formulations in the form of solutions, ointments, insets, gels and the like. Pharmaceutical formulations prepared to treat intraocular pressure would typically contain about 0.1% to 15% by weight, preferably 0.5% to 2% by weight, of a compound of this invention. For this use, the compounds of this invention may also be used in combination with other medications for the treatment of glaucoma including

choline esterase inhibitors such as physostigmine salicylate or demecarium bromide, parasympathominetic agents such as pilocarpine nitrate, β-adrenergic antagonists such as timolol maleate, adrenergic agonists such as epinephrine and carbonic anhydrase inhibitors such as MK-507.

In the management of hypertension and the clinical conditions noted above, the compounds of this invention may be utilized with a pharmaceutical carrier in compositions such as tablets, capsules or elixirs for oral administration, suppositories for rectal administration, sterile solutions or suspensions for parenteral or intramuscular administration, and the like. The compounds of this invention can be administered to patients (animals and human) in need of such treatment in dosages that will provide optimal pharmaceutical efficacy. Although the dose will vary from patient to patient depending upon the nature and severity of disease, the patient's weight, special diet that is being followed by a patient, concurrent medication, and other factors which those skilled in the art will recognize, the dosage range will generally be about 1 to 1000 mg per patient per day which can be administered in single or multiple doses. Preferably, the dosage range will be about 5 to 500 mg per patient per day; more preferably about 5 to 300 mg per patient per day.

The compounds of this invention can also be administered in combination with other antihypertensives and/or diuretics. For example, the compounds of this invention can be given in combination with diuretics such as hydrochlorothiazide, chlorothiazide, chlorthalidone, methylclothiazide, furosemide, ethacrynic acid, triamterene, amiloride spironolactone and atriopeptin; calcium channel blockers, such as diltiazem, felodipine, nifedipine, amlodipine, nimodipine, isradipine, nitrendipine and verapamil; β adrenergic antagonists such as timolol, atenolol, metoprolol, propanolol, nadolol and pindolol; angiotensin converting enzyme inhibitors such as enalapril, lisinopril, captopril, ramipril, quinapril and zofenopril; renin inhibitors such as A-69729, FK 906 and FK 744; α-adrenergic antagonists such as prazosin, doxazosin, and terazosin; sympatholytic agents such as methyldopa, clonidine and guanabenz; atriopeptidase inhibitors (alone or with ANP) such as UK-79300; serotonin antagonists such as ketanserin; A_2-adrenosine receptor agonists such as CGS 22492C; potassium channel agonists such as pinacidil and cromakalim; and various other antihypertensive drugs including reserpine, minoxidil, guanethidine, hydralazinc hydrochloride and sodium

nitroprusside as well as combinations of the above-named drugs. Combinations useful in the management of congestive heart failure include, in addition, compounds of this invention with cardiac stimulants such as dobutamine and xamoterol and phosphodiesterase inhibitors including amrinone and milrinone.

Typically, the individual daily dosages for these combinations can range from about one-fifth of the minimally recommended clinical dosages to the maximum recommended levels for the entities when they are given singly. To illustrate these combinations, one of the angiotensin II antagonists of this invention effective clinically in the 5-500 milligrams per day range can be effectively combined at levels at the 1.0-500 milligrams per day range with the following compounds at the indicated per day dose range; hydrochlorothiazide (6-100 mg), chlorothiazide (125-500 mg), ethacrynic acid (5-200 mg), amiloride (5-20 mg), furosemide (5-80 mg), propranolol (10-480 mg), timolol maleate (1-20 mg), methyldopa (125-2000 mg), felodipine (1-20 mg), nifedipine (5-120 mg), nitrendipine (5-60 mg), and diltiazem (30-540 mg). In addition, triple drug combinations of hydrochlorothiazide (5-100 mg) plus amiloride (5-20 mg) plus angiotensin II antagonists of this invention (1-500 mg) or hydrochlorothiazide (5-100 mg) plus timolol maleate (5-60 mg) plus an angiotensin II antagonists of this invention (1-500 mg) or hydrochlorothiazide (5-200 mg) and nifedipine (5-60 mg) plus an angiotensin II antagonist of this invention (1-500 mg) are effective combinations to control blood pressure in hypertensive patients. Naturally, these dose ranges can be adjusted on a unit basis as necessary to permit divided daily dosage and, as noted above, the dose will vary depending on the nature and severity of the disease, weight of patient, special diets and other factors.

The active ingredient can be administered orally in solid dosage forms, such as capsules, tablets, and powders, or in liquid dosage forms, such as elixirs syrups, and suspensions. It can also be administered parenterally, in sterile liquid dosage forms. Gelatin capsules contain the active ingredient and powdered carriers, such as lactose, starch, cellulose derivatives, magnesium stearate, stearic acid, and the like. Similar diluents can be used to make compressed tablets. Both tablets and capsules can be manufactured as sustained release products to provide for continuous release of medication over a period of hours. Compressed tablets can be sugar coated or film coated to mask any unpleasant taste and protect the tablet

from the atmosphere, or enteric coated for selective disintegration in the gastrointestinal tract.

Liquid dosage forms for oral administration can contain coloring and flavoring to increase patient acceptance.

In general, water, a suitable oil, saline, aqueous dextrose (glucose), and related sugar solutions and glycols such as propylene glycol or polyethylene glycols are suitable carriers for parenteral solutions. Solutions for parenteral administration preferably contain a water soluble salt of the active ingredient, suitable stabilizing agents, and if necessary, buffer substances. Antioxidizing agents such as sodium bisulfite, sodium sulfite, or ascorbic acid, either alone or combined, are suitable stabilizing agents. Also used are citric acid and its salts and sodium EDTA. In addition, parenteral solutions can contain preservatives, such as benzalkonium chloride, methyl- or propylparaben, and chlorobutanol.

Suitable pharmaceutical carriers are described in Remington's Pharmaceutical Sciences, A. Osol, a standard reference text in this field.

Useful pharmaceutical dosage-forms for administration of the compounds of this invention can be illustrated as follows:

Capsules

A large number of unit capsules are prepared by filling standard two-piece hard gelatin capsules each with 100 milligrams of powdered active ingredient, 150 milligrams of lactose, 50 milligrams of cellulose, and 6 milligrams magnesium stearate.

Soft Gelatin Capsules

A mixture of active ingredient in a digestible oil such as soybean oil, cottonseed oil or olive oil is prepared and injected by means of a positive displacement pump into gelatin to form soft gelatin capsules containing 100 milligrams of the active ingredient. The capsules are washed and dried.

Tablets

A large number of tablets are prepared by conventional procedures so that the dosage unit is 100 milligrams of active ingredient, 0.2 milligrams of colloidal silicon dioxide, 5 milligrams of magnesium stearate, 275 milligrams of microcrystalline cellulose, 11 milligrams of starch and 98.8 milligrams of lactose. Appropriate coatings may be applied to increase palatability or delay absorption.

Injectable

A parenteral composition suitable for administration by injection is prepared by stirring 1.5% by weight of active ingredient in 10% by volume propylene glycol. The solution is made to volume with water for injection and sterilized.

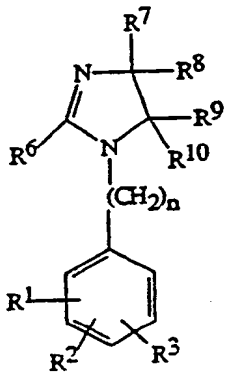
Suspension

An aqueous suspension is prepared for oral administration so that each 5 milliliters contain 100 milligrams of finely divided active ingredient, 100 milligrams of sodium carboxymethyl cellulose, 5 milligrams of sodium benzoate, 1.0 grams of sorbitol solution, U.S.P., and 0.025 milliliters of vanillin.

The same dosage forms can generally be used when stepwise in conjunction with another therapeutic agent. When the drugs are administered in physical combination, the dosage form and administration route should be selected for compatibility with both drugs.

CLAIMS

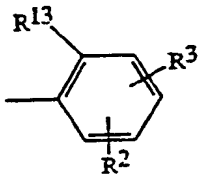
1. A compound of formula (I)



(I)

wherein:

R^1 is other than in the ortho position and is:



;

R^2 is

(a) H,
(b) halo (F, Cl, Br, I),
(c) C_1-C_4 alkyl,
(d) C_1-C_4 alkoxy,
(e) C_1-C_4 acyloxy,
(f) C_1-C_4 alkylthio
(g) C_1-C_4 alkylsulfinyl,
(h) C_1-C_4 alkylsulfonyl,
(i) hydroxy (C_1-C_4) alkyl,
(j) aryl (C_1-C_4) alkyl,
(k) $-CO_2H$,
(l) -CN,
(m) $-CONHOR^{12}$,
(n) $-SO_2NHR^{21}$,
(o) $-NH_2$,
(p) C_1-C_4 alkylamino,
(q) C_1-C_4 dialkylamino,
(r) $-NHSO_2R^{20}$,
(s) $-NO_2$,
(t) furyl,
(u) aryl;

R^3 is

(a) H,
(b) halo,
(c) C_1-C_4 alkyl,
(d) C_1-C_4 alkoxy,
(e) C_1-C_4 alkoxyalkyl;

R^4 is

(a) -CN,
(b) $-NO_2$,
(c) $-CO_2R^{11}$;

R^5 is

(a) H,
(b) C_1-C_6 alkyl,
(c) C_3-C_6 cycloalkyl,
(d) C_2-C_4 alkenyl,
(e) C_2-C_4 alkynyl;

R^6 is

(a) C_1-C_{10} alkyl,
(b) C_3-C_8 alkenyl,
(c) C_3-C_8 alkynyl,
(d) C_3-C_8 cycloalkyl,
(e) C_4-C_8 cycloalkenyl,
(f) C_4-C_{10} cycloalkylalkyl,
(g) C_5-C_{10} cycloalkylalkenyl,
(h) C_5-C_{10} cycloalkylalkynyl,
(i) $-(CH_2)SZ(CH_2)_mR^5$,
(j) phenyl, optionally substituted with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, $-NO_2$, $-NH_2$, -OH and benzyloxy,
(k) benzyl, optionally substituted on the phenyl ring with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy and $-NO_2$;

R^7, R^8, R^9, and R^{10} are independently chosen from

(a) H,
(b) C_1-C_8 alkyl,
(c) C_1-C_8 perfluoroalkyl,
(d) C_3-C_6 cycloalkyl,
(e) $-NO_2$,
(f) -CN,
(g) $-CONR^{15}R^{16}$,
(h) $-CO_2R^{17}$,
(i) $-OR^{18}$,
(j) $-(CH_2)_nCONR^{15}R^{16}$,
(k) $-(CH_2)_nCO_2R^{17}$,

(l) $(CH_2)_nOR^{18}$,
(m) aryl,
(n) CH_2 aryl,
(o) R^7 and R^8 taken together are $-(CH_2)_t-$ or $-(CH_2)_mX(CH_2)_q-$,
(p) R^9 and R^{10} taken together can be S or O;

R^{11} is

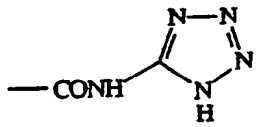
(a) H,
(b) C_1-C_4 alkyl,
(c) C_1-C_4 cycloalkyl,
(d) phenyl,
(e) benzyl;

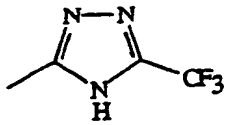
R^{12} is

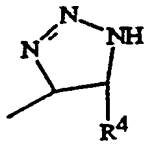
(a) H,
(b) methyl,
(c) benzyl;

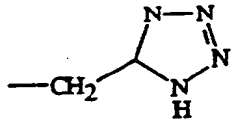
R^{13} is

(a) $-CH_2CO_2H$,
(b) $-C(CF_3)_2OH$,
(c) $-CONHNHSO_2CF_3$,
(d) $-CONHOR^{12}$,
(e) $-CONHSO_2R^{20}$,
(f) $-CONHSO_2NHR^{19}$,
(g) $-C(OH)R^{19}PO_3H_2$
(h) $-NHCONHSO_2R^{20}$,
(i) $-NHPO_3H_2$,
(j) $-SO_2NHCOR^{20}$,
(k) $-OPO_3H_2$
(l) $-OSO_3H$,
(m) $-PO(OH)R^{19}$
(n) $-PO_3H_2$,
(o) $-SO_3H$,
(p) $-SO_2NHR^{19}$,
(q) $-NHSO_2NHCOR^{20}$,
(r) $-SO_2NHCONHR^{19}$,

(s) 

(t) 

(u) 

(v) 

R^{14} is

(a) H,

(b) C_1-C_6 alkyl,

(c) aryl,

(d) benzyl,

(e) COR^{11},

(f) $CONHR^{11}$;

R^{15} and R^{16} are independently

(a) H,

(b) C_1-C_6 alkyl,

(c) aryl,

(d) aryl (C_1-C_4) alkyl,

or taken together constitute a

(e) piperidine ring,

(f) morpholine ring,

(g) piperazine ring, optionally N-substituted with C_1-C_6 alkyl, phenyl or benzyl;

R^{17} is

(a) H,

(b) C_1-C_6 alkyl.

(c) phenyl,

(d) benzyl;

R^{18} is

(a) H,

(b) C_1-C_6 alkyl,

(c) phenyl,

(d) benzyl;

R^{19} is

(a) H,

(b) C_1-C_5 alkyl optionally substituted with a substituent selected from the group consisting of aryl, -OH, -SH, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkylthio, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, heteroaryl, $-CO_2$-benzyl, $-NH_2$, C_1-C_4 alkylamino, C_1-C_4 dialkylamino, $-PO_3H_2$,

(c) aryl,

(d) $-CH_2$ aryl,

(e) heteroaryl;

R^{20} is

(a) aryl,

(b) C_3-C_7 cycloalkyl,

(c) C_1-C_4 perfluoroalkyl,

(d) C_1-C_4 alkyl optionally substituted with a substituent selected from the group consisting of aryl, -OH, -SH, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkylthio, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, $-CO_2$-benzyl, $-NH_2$, C_1-C_4 alkylamino, C_1-C_4 dialkylamino, $-PO_3H_2$, heteroaryl,

(e) C_1-C_4 alkoxy optionally substituted with a substituent selected from the group consisting of aryl, -OH, -SH, C_1-C_4 alkyl, C_1-C_4 alkoxy, C_1-C_4 alkylthio, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, $-CO_2$-benzyl, $-NH_2$, C_1-C_4 alkylamino, C_1-C_4 dialkylamino, $-PO_3H_2$, heteroaryl,

(f) heteroaryl;

R^{21} is

(a) H,

(b) C_1-C_6 alkyl,

(c) phenyl,

(d) benzyl;

X is

(a) -S-,

(b) -O-,

(c) -SO-,

(d) $-SO_2-$,

(e) $-CHR^{14}-$,

(f) $-NR^{14}-$;

Z is

(a) -O-,

(b) -S-,

(c) $-NR^{11}-$;

m is 1 to 5;

n is 1 to 4;

q is 1 to 5;

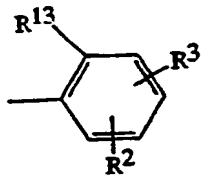
t is 2 to 5;

wherein aryl is phenyl optionally substituted with one or two substituents selected from the group consisting of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, $-NO_2$, CF_3, C_1-C_4 alkylthio, -OH, $-NH_2$, C_1-C_4 alkylamino, C_1-C_4 dialkylamino, -CN, $-CO_2H$, $-CO_2CH_3$, $-CO_2CH_2CH_3$, $-CO_2$-benzyl;

wherein heteroaryl is selected from the group consisting of 2-, 3- or 4-pyridyl; 2- or 3-furyl; 2- or 3-thiophenyl; 2-, 3- or 4-quinolinyl or 1-, 3- or 4-isoquinolinyl optionally substituted with one to three substituents selected from the group consisting of -OH, -SH, C_1-C_4 alkyl, C_1-C_4 alkoxy, $-CF_3$, halo, $-NO_2$, $-CO_2H$, $-CO_2CH_3$, $-CO_2$-benzyl, $-NH_2$, $-NH(C_1$-$C_4)$ alkyl, $-N(C_1$-C_4 alkyl$)_2$;

or a pharmaceutically acceptable salt of these compounds.

2. A compound of Claim 1 wherein R^1 is in the para position and is



;

R^6 is

(a) C_1-C_{10} alkyl,

(b) C_3-C_{10} alkenyl,

(c) C_3-C_{10} alkynyl,

(d) C_3-C_8 cycloalkyl,

(e) phenyl, optionally substituted with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, -NO_2, -NH_2, -OH and benzyloxy,

(f) benzyl, optionally substituted on the phenyl ring with one or two substituents selected from the group consisting of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy and -NO_2;

R^7, R^8, R^9, R^{10} are independently

(a) H,

(b) C_1-C_4 alkyl,

(c) C_1-C_4 perfluoroalkyl,

(d) C_3-C_6 cycloalkyl,

(e) phenyl, optionally substituted with one or two substituents selected from the group of halo, C_1-C_3 alkyl, C_1-C_3 alkoxy, NO_2, CF_3, NH_2, and OH,

(f) R^7 and R^8 taken together are -$(CH_2)_t$-, or -$(CH_2)_m X(CH_2)_q$-,

(g) R^9 and R^{10} taken together can be S or O;

R^{13} is

(a) -$CONHSO_2R^{20}$,

(b) -$NHCONHSO_2R^{20}$,

(c) -$NHSO_2NHCOR^{20}$,

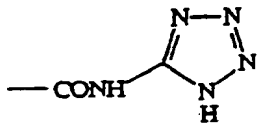
(d) -PO_3H_2,

(e) -SO_3H,

(f) -SO_2NHR^{19},

(g) $-SO_2NHCOR^{20}$,

(h) $-SO_2NHCONHR^{19}$,

(i)  ;

or a pharmaceutically acceptable salt thereof.

3. A compound of Claim 2 wherein

R^6 is

(a) C_1-C_7 alkyl,

(b) C_3-C_4 alkenyl,

(c) C_3-C_4 alkynyl,

(d) phenyl, optionally substituted with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, $-NO_2$, $-NH_2$, -OH and benzyloxy;

R^{13} is

(a) $-CONHSO_2R^{20}$,

(b) $-NHCONHSO_2R^{20}$,

(c) $-SO_2NHR^{19}$,

(d) $-SO_2NHCONHR^{19}$,

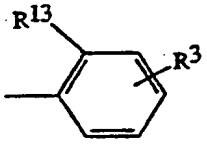
(e) $-SO_2NHCOR^{20}$,

(f) $NHSO_2NHCOR^{20}$

or a pharmaceutically acceptable salt thereof.

4. A compound of Claim 3 wherein

R^1 is



or a pharmaceutically acceptable salt thereof.

5. A compound of Claim 4 selected from the groupconsisting of

- N-[4'-[[4-oxo-2-propyl-8-thia-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide

- N-[4'-[[4-oxo-2-butyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-benzamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-4-chlorobenzamide
- N-[4'-[[4-oxo-2-propyl-8-thia-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[2.4]hept-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4-oxo-2-butyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dicyclopropyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-bistrifluoromethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl][3'-methyl(1,1'-biphenyl-2-ylsulfonyl)]]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl][4-propyl(1,1'-biphenyl-2-ylsulfonyl)]]-hexanamide
- N-[4'-[[4,5-dihydro-4,4-dimethyl-5-oxo-2-propyl-1H-imidazol-1-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-trifluoroacetamide
- 3,5-dihydro-5,5-dimethyl-2-propyl-3-[(2'-(N-((phenylsulfonyl)carboxamido)biphen-4-yl)methyl]-4H-imidazol-4-one
- N-[4'-[[4-oxo-8-benzyl-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, phenethyl ester
- N-[4'-[[8-benzoyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, n-butyl ester

- N-[4'-[[8-benzoyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl][3'-fluoro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[8-benzoyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl][3'-chloro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[8-acetyl-4-oxo-2-propyl-1,3,8-triazaspiro[4.5]dec-1-en-3-yl]methyl][3'-methyl-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl][(3'-fluoro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl][(3'-chloro-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[4-oxo-2-propyl-8-oxa-1,3-diazaspiro[4.5]dec-1-en-3-yl]methyl][(3'-methyl-(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, phenethyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl](1,1'-biphenyl-2-ylsulfonyl)]-carbamic acid, 2-methylpropyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl][3'-methyl(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid, n-butyl ester
- N-[4'-[[4-oxo-2-propyl-1,3-diazaspiro[4.4]non-1-en-3-yl]methyl][4-propyl(1,1'-biphenyl-2-ylsulfonyl)]]-carbamic acid,n-butyl ester

6. A pharmaceutical composition comprising a pharmaceutically suitable carrier and a compound of any one of Claims 1 through 4.

7. A pharmaceutical composition comprising a pharmaceutically suitable carrier and a compound of Claim 5.

8. A compound according to any one of Claims 1 to 4 or a composition according to Claim 6 for use in medicine.

9. A compound according to Claim 5 or a composition according to Claim 7 for use in medicine.

10. A compound according to any one of Claims 1 to 4 or a composition according to Claim 6 for use as an anti-hypertensive.

11. A compound according to Claim 5 or a composition according to Claim 7 for use as an anti-hypertensive.

12. A compound according to any one of Claims 1 to 4 or a composition according to Claim 6 for use in treating congestive heart failure.

13. A compound according to Claim 5 or a composition according to Claim 7 for use in treating congestive heart failure.

R^5 is

(a) H,
(b) C_1-C_6 alkyl,
(c) C_3-C_6 cycloalkyl,
(d) C_2-C_4 alkenyl,
(e) C_2-C_4 alkynyl;

R^6 is

(a) C_1-C_{10} alkyl,
(b) C_3-C_8 alkenyl,
(c) C_3-C_8 alkynyl,
(d) C_3-C_8 cycloalkyl,
(e) C_4-C_8 cycloalkenyl,
(f) C_4-C_{10} cycloalkylalkyl,
(g) C_5-C_{10} cycloalkylalkenyl,
(h) C_5-C_{10} cycloalkylalkynyl,
(i) $-(CH_2)_tZ(CH_2)_mR^5$,
(j) phenyl, optionally substituted with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy, $-NO_2$, $-NH_2$, -OH and benzyloxy,
(k) benzyl, optionally substituted on the phenyl ring with 1-2 substituents selected from the group of halo, C_1-C_4 alkyl, C_1-C_4 alkoxy and $-NO_2$;

R^7, R^8, R^9, and R^{10} are independently chosen from

(a) H,
(b) C_1-C_8 alkyl,
(c) C_1-C_8 perfluoroalkyl,
(d) C_3-C_6 cycloalkyl,
(e) $-NO_2$,
(f) -CN,
(g) $-CONR^{15}R^{16}$,
(h) $-CO_2R^{17}$,
(i) $-OR^{18}$,
(j) $-(CH_2)_nCONR^{15}R^{16}$,
(k) $-(CH_2)_nCO_2R^{17}$,

Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

Application number
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Relevant Technical Fields

(i) UK Cl (Ed.M) C2C (CSB, CSC, CSF, CTR)

(ii) Int Cl (Ed.5) C07D

Search Examiner
MR P DAVEY

Date of completion of Search
2 NOVEMBER 1994

Databases (see below)
(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE DATABASES: CAS ONLINE

Documents considered relevant following a search in respect of Claims :-
1-13

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
X	WO 93/04046 A1 (DU PONT) see eg Examples 1 and 2 and Table 1	1,6,8,10 and 12 at least
X	WO 93/04045 A1 (DU PONT) see eg Table 1	1,6,8,10 and 12 at least

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).